



CONNECARE

WP2 - CO-DESIGN OF INTEGRATED CARE

D2.4: CASE STUDIES DESCRIPTION AND THE ASSOCIATED CO-DESIGN

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

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Abstract	<p>The current document provides a complete view of case study definitions as a product of the co-design process completed so far. It provides full details on the 1st Plan Do Study Act (PDSA) cycle from the clinical perspective, summarizing the objectives and results of all held meetings and activities, as well as all the feedback provided to technical partners. Moreover, the current document includes detailed site-specific case studies definitions and associated workflows. Finally, full details on functional and non-functional requirements of the CONNECARE Smart Adaptive Case Management (SACM) platform And Self-Management System (SMS) are provided.</p>
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Executive Summary

The current document provides a complete view of case study definitions and system requirements as a product of the co-design process carried out until July 2017. To this end, the document is structured in four main sections. **Section 1, CONNECARE co-design process**, summarizes the co-design framework of the CONNECARE project, as previously detailed in deliverable *D2.1. Cook Book for Project Development*. It includes both the summary of the methodology and the timing of the process. Then, **Section 2** describes the **First PDSA cycle** and provides an in-depth view of CONNECARE's 1st Plan Do Study Act (PDSA) cycle. This section also provides a full description of case study definitions, which have been strongly influenced by the CONNECARE Adaptive Case Management (ACM) design and existing real-life deployments of integrated care in each of the sites (described in deliverable *D2.2. Adaptive Case Management Design*). Detailed site-specific workflows, process tasks and case evaluation tools, are presented in a structured format. The section concludes with a summary of the results of the 1st PDSA cycle evaluation. **Section 3, Upcoming PDSA cycles**, provides a brief overview of the next steps in the co-design process. The document concludes that the CONNECARE project is being developed as planned, thanks to the full engagement of both clinical and technical teams; and, most importantly, the processes and tools that are being developed reflect the real needs of patients and professionals, and are flexible enough to adapt to site-specific characteristics. Finally, **Section 4**, summarizes **functional and non-functional requirements** of the two main subsystem of the overall CONNECARE system: the Smart Adaptive Case Manager system (SACM) and the Self-Management System (SMS). Similarly to case study definitions, SACM and SMS functional requirements have been strongly influenced by the CONNECARE Adaptive Case Management (ACM) design and existing real-life deployments of integrated care in each of the sites, as described in deliverable *D2.2. Adaptive Case Management Design*. Section 4 also includes a summary of the impressions and comments of case-study-specific working team members at each site to a first set of SACM and SMS mockups.

Overall, the work summarized in this document is based on the foundation created in “D2.1 – Cook-book for project development”, “D5.1 – Collaborative digital health framework”, and “D7.1 – Evaluation plan for the entire project”, and together with “D2.2 – Adaptive Case Management Design” and “D2.3 – Patient-based Health Risk Assessment and Stratification” provides an accurate summary of the project progression up to July 2017. Therefore, these previous deliverables are highly recommended to be read:

Number	Title	Description
D2.1	Cook-book for project development	The current document provides an overall view of the CONNECARE project, and describes the procedures for its development. The deliverable indicates the different phases of the project, with an emphasis on how PDSA cycles will be structured. Overall, the CONNECARE project does not aim at a rigid integrated care solution



		that needs to be adopted by all potential deployment sites but to a flexible solution that has high potential for generalization at the EU level. In this sense, innovative methodologies involving both global and local stakeholders have been adopted.
D5.1	Collaborative Digital Health Framework	This deliverable describes the collaborative DHF that includes the interoperability model and the communication protocols.
D7.1	Evaluation plan for the entire project	This deliverable illustrates the evaluation plan for the entire project. In particular, it defines the three case studies that will be performed during the project and that are mentioned in this deliverable.



1. CONNECARE co-design process

1.1 Definition of co-design process

The CONNECARE integrated care solution is being built upon the experience of on-going large-scale deployment programs in each of the participating sites, and the involvement of the main stakeholders in the process (staff and patients). A collaborative setting has been established in order to capture the feedback of all actors of the integrated care process. The first phase in the CONNECARE development plan is the **co-design** phase, that aims at: i) adjusting the details of the service workflows to the characteristics of each site before initiation of the clinical studies at M20; ii) participating in the definition of the characteristics of the ICT developments by defining the functional and non-functional requirements; and, iii) assessing suitability and acceptance of key indicators to be used for evaluation of the clinical studies.

CONNECARE follows a co-design approach using iterative Plan, Do, Study, Act (PDSA) cycles to generate the design for the case studies in each site. A description of PDSA was provided in D2.1. Briefly, the PDSA methodology constitutes a pragmatic scientific method for testing changes in complex systems¹. PDSA cycles consist of a systematic series of steps for gaining valuable learning and knowledge for the continual improvement of a product or process. Briefly, the “plan” stage aims to identify potential changes for improvement of a given system; in the “do” stage the proposed changes are implemented and tested; afterwards, the success of the changes is evaluated in the “study” stage; and finally, the “act” stage identifies adaptations and plans for next steps to inform a new cycle. These four stages mirror the scientific experimental method: hypothesis formulation; data collection to test the hypothesis; data analysis and interpretation; and, hypothesis reformulation. Overall, PDSA is being a successful approach for the development of the CONNECARE technical solution because provides overview, ownership and involvement of stakeholders who at all times have insight on the intervention process, while it encourages management responsibilities to ensure focus, pace and self-discipline in the process. Moreover, the pragmatic nature of PDSA provides flexibility to develop interventions according to stakeholder’s feedback ensuring fit-for-purpose solutions, while providing the opportunity to build evidence for change and engage stakeholders as confidence in the intervention increases.

1.2 Overall planning of the co-design process

At M7 (October 2016) the first PDSA cycle of each of the CONNECARE case studies began. For the first PDSA cycle (October 2016 - March 2017) a reduced number of stakeholders was directly involved, but their input has been crucial in order to fully define the case studies in each site as well as all technical

¹ Moen R, Norman C. Evolution of the PDCA cycle. 2006



requirements. The 2nd PDSA (April 2017 – September 2017) is already ongoing and involves an increasing number of stakeholders giving feedback on mock-ups of the technical solutions, that will ultimately be polished and tested in upcoming cycles and trials. These first two PDSA cycles for each of the use cases constitute the co-design phase of the CONNECARE project. Next, at M19, the co-design phase will have a direct continuation in the CONNECARE refinement and fine-tuning phase through the implementation of the pilots (clinical studies), aiming to support the technological research activities in WP3 and WP4 as well as the evolutionary integration in WP5. The refinement of the CONNECARE solution will be achieved through PDSA methodology, as a direct continuation of the PDSA cycles in the co-design process, according to the common PDSA framework described in the CONNECARE Cookbook (D2.1). In this phase of the CONNECARE project the “small-scale testing” principle will be progressively replaced by a broader degree of implementation, thus involving larger groups patients and staff. This shift will prove useful for the creation of large-scale deployment recommendations and guidelines, as well as for the detection of issues derived from the involvement of patients and professionals without an “early adopter” or “unafraid of change” profile. The ultimate goal of this iterative process will be the final release of the CONNECARE solution at M42 (September 2019).

2. First PDSA cycle

2.1 General strategy

The 1st PDSA cycle constituted the first contact between researchers and stakeholders participating in the CONNECARE project. Although the cycle was performed according to CONNECARE Cookbook (D2.1) specifications, the performed actions (meetings and activities) varied across sites. The common objectives for the 1st PDSA cycle are summarized below.

1. Enrol working the team members, including the widest range of stakeholders (researchers, professionals and patients) and covering all aspects of the envisioned CONNECARE process.
2. Familiarize working team members with the CONNECARE project, its ambitions, methods, processes and scenarios (case studies).
3. Consolidate case study definitions, providing feedback to technical partners
4. Consolidate workflow definitions, providing feedback to technical partners.
5. Specify technical requirements, providing feedback to technical partners.
6. Provide first insight on the Smart Adaptive Case Manager system (SACM) and the Self-Management System (SMS) mock-ups.
7. Evaluate the overall performance done in the 1st PDSA cycle.

The methodology for this and upcoming PDSA cycles was established in the CONNECARE Cookbook (D2.1). Briefly, periodic meetings were held during the cycle, involving clinical partners and staff from the associated technical partners. The meetings followed an organized schedule and generated a Working Team Report Form, which was subsequently provided to technical partners to aid them in their development endeavours. Feedback and progress from technical partners was analysed in subsequent meetings, in an iterative process of valuable knowledge transfer. Overall, this process has tightened the bonds between stakeholders, researchers and technical developers, thus ensuring that the developed tools progress in the appropriate direction and fit stakeholders requirements.

As a last step of the first PDSA cycle, an evaluation process was established. A preliminary evaluation, given the early phase of the CONNECARE development plan, covered the main evaluation domains established in D2.1: (i) Patients and professionals' engagement and perspectives; (ii) New care models and supporting ICT; (iii) Safety, ethical, and legal aspects; and, (iv) Maturity of the technology. The dimension of Clinical effectiveness and costs will be incorporated to the evaluation of future PDSA cycles.

2.2 Site specific efforts

2.2.1 Barcelona (Spain)

2.2.1.1 Meetings and activities

Internal working teams in Barcelona were composed of key personnel deeply involved in CONNECARE case studies, which included a horizontal team among case studies (composed by the chief of the Lung Function Unit and a digital health project manager) and case study specific team. The participants for Case Study 1 (CS1) were the head of the Integrated Care unit and a medical doctor/consultant pulmonologist and for Case Study 2 (CS2) and Case Study 3 (CS3), an anaesthesiologist and two Physiotherapists. Team members had regular interactions due to the natural cooperation among them. However, specific meetings were scheduled in order to tackle the PDSA cycle objectives and provide structured feedback to technical partners. All of these meetings were summarized in working team reports (see Annex 6.1.1). A summary of the meetings objectives and main results is provided below.

Date	Objectives	Results
14/11/2016	<ul style="list-style-type: none"> Revise with all participants the focus and aims of CONNECARE case study 1 programs Identify high-priority aspects that to initiate CONNECARE technical developments 	<ul style="list-style-type: none"> Awareness by all participants about the specific programs of CONNECARE case study 1 Identification of areas for improvement of current processes The working team concluded to explore how to align CONNECARE developments with current tools generated by the Catalan Ministry of Health to support coordinated care Concrete actions were agreed as next steps
18/11/2016	<ul style="list-style-type: none"> Revise with all participants what are the focus and aims of CONNECARE case study 2 and 3 programs Identify high-priority aspects that to initiate CONNECARE technical developments 	<ul style="list-style-type: none"> Awareness by all participants about the specific programs of CONNECARE case study 2 and 3 Agreement on details for data collection To explore how to align CONNECARE developments with current tools generated by the Catalan Ministry of Health to support coordinated care Concrete actions were agreed as next steps
31/01/2017	<ul style="list-style-type: none"> To revise with all participants definition of case study 1 service workflows and functional requirements To revise and start to define health risk assessment and stratification strategies for case study 1 	<ul style="list-style-type: none"> Revised version of case studies workflows for HDOM and LTOT Conclusion to share with all CONNECARE partners the initial version of the protocol for health risk assessment and stratification Start model generation by using retrospective data from HDOM program at hospital Clínic.



		<ul style="list-style-type: none"> • Generate logistic regression models for prediction of readmission and mortality in HDOM • Apply Case Based Reasoning to support patient treatment planning by monitoring and adjusting the treatment over time in all CONNECARE case studies
03/01/2017	<ul style="list-style-type: none"> • Revise with all participants specific aspects of the CONNECARE Case Studies 2 & 3 (i.e., service workflows and functional requirements). • To revise and start to define health risk assessment and stratification strategies for case study 2 & 3. 	<ul style="list-style-type: none"> • Revised version of case studies workflows for case studies 2 and 3.

2.2.1.2 Case study definitions and associated CMNN

Specificities for CS1, CS2 and CS3 in Barcelona have been discussed in details by the working teams throughout the 1st PDSA cycle and a full report of case study definitions and associated CMNN is provided in the annexes (Annex 6.2.1). Case study definitions have been structured by means of the CONNECARE process areas, namely: (i) Case identification; (ii) Case evaluation; (iii) Work plan definition, Follow-up & Event handling; and, (iv) Discharge. The following table summarizes the key elements of each area for each case study.

	CS1	CS2	CS3
Case Identification			
Inclusion criteria	<ul style="list-style-type: none"> • living in his/her house within the healthcare sector • having carer during 24h per day • having phone at home • signing written acceptance to participate in the study • age > 18 	<ul style="list-style-type: none"> • > 70 years • Major surgery of some of the following specialty: (Abdominal / Gynaecology / Cardiovascular / Urology / Thorax) • High risk score (ASA 3-4) • Desired priority of the surgery of at least 3-4 weeks • signing written acceptance to participate in the study 	<ul style="list-style-type: none"> • > 70 years • Major surgery of some of the following specialty: (Abdominal / Gynaecology / Cardiovascular / Urology / Thorax) • High risk score (ASA 3-4) • Desired priority of the surgery of at least 3-4 weeks • signing written acceptance to participate in the study
Exclusion criteria	<ul style="list-style-type: none"> • living in a nursing home • high risk of severe clinical deterioration not treatable at home, as assessed by best medical judgment 	<ul style="list-style-type: none"> • <= 70 years • Other specialties of major surgery • ASA 1-2 	<ul style="list-style-type: none"> • <= 70 years • Other specialties of major surgery • ASA 1-2



	<ul style="list-style-type: none"> • admission in a short stay unit • severe psychiatric disorder • insufficient manpower of the professional team running the program • age < 18 	<ul style="list-style-type: none"> • Not signing written acceptance to participate in the study 	<ul style="list-style-type: none"> • Not signing written acceptance to participate in the study
Case Evaluation			
Tests & measures	<ul style="list-style-type: none"> • EMR assessment for: Health care resources, Diagnosis info, Surgery info and Comorbidity (Charlson index). • Socio-demographics • Risk factors • Barthel Index • Morisky-Green • SF36. 	<ul style="list-style-type: none"> • Charlson Index • Socio-demographics • Physical Examination • MUST nutritional score • CSHA frailty scale • HAD scale • DUKE index • Hand grip • 6MWT • Sit-to-stand • YPAS • Adherence profiling • Barriers and facilitators detection 	<ul style="list-style-type: none"> • Charlson Index • Socio-demographics • Physical Examination • MUST nutritional score • CSHA frailty scale • HAD scale • DUKE index • Hand grip • 6MWT • Sit-to-stand • YPAS • Adherence profiling <p>Barriers and facilitators detection</p>
Work plan definition and Follow-up & Event handling			
Potential interventions	<ul style="list-style-type: none"> • Daily nurse home visit • Arterial blood gases • Blood analytics • Sputum Culture • Forced Spirometry • Physician's home visit • Remote patient monitoring • Call centre management 	<p><u>Prior to hospitalization:</u></p> <ul style="list-style-type: none"> • Check health status • Check & update Physical Activity plan • Supervised training • Chest Physiotherapy • Mindfulness group session • Dietary intervention • Physical Activity prescription and monitoring • Motivational messaging • Educational material <p><u>During hospitalization:</u></p> <ul style="list-style-type: none"> • Check perisurgical care status • Hospital Discharge report <p><u>After hospitalization:</u></p> <ul style="list-style-type: none"> • Physical Activity prescription and monitoring • Motivational messaging • Educational material 	<ul style="list-style-type: none"> • Check health status • Check & update Physical Activity plan • Supervised training • Chest Physiotherapy • Mindfulness group session • Dietary intervention • Physical Activity prescription and monitoring • Motivational messaging • Educational material
Discharge			



Forms	<ul style="list-style-type: none"> • Discharge Report by Physician • Discharge Report by RNST 	<ul style="list-style-type: none"> • Discharge Report 	<ul style="list-style-type: none"> • Discharge Report
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2.2.2 Lleida (Spain)

2.2.2.1 Meetings and activities

Working teams in Lleida were defined aiming to cover the main actors foreseen in the CONNECARE process. Therefore, the composition of working teams was very heterogeneous. Working teams included between 15 and 20 highly motivated actors of the CONNECARE process. The main profiles in the CS1 working team were: Internal medicine physician; Primary care physician; Nurse; Pneumologist; Epidemiologist; Case manager; Social worker; IT personnel; Technician; and, from the second meeting a COPD patient. Similarly, the main profiles in the CS2 were: Orthopaedics surgeon; Anaesthesiologist; Physiotherapist; Rehabilitation physician; Primary care physician; Nurse; Internal medicine physician; Epidemiologist; Case Manager; Medical manager; IT personnel; and, Technician. Although there was an intense flux of communication between working team members via emails, specific meetings were scheduled in order to tackle the PDSA cycle objectives and provide structured feedback to technical partners. All of these meetings were summarized in working team reports (see Annex 6.1.2). A summary of the meetings objectives and main results is provided below.

Date	Objectives	Results
22/11/2016	<ul style="list-style-type: none"> • Enrol CS1 working team members. • Description of CONNECARE. • Description and consolidation of CS1. • Definition and of roles of professionals in CS1. • Discussion of potential to-be-used tools in the Case identification, Case evaluation, and intervention phases of the CONNECARE process. 	<ul style="list-style-type: none"> • Awareness by all participants about the project and its specific case study, and initial role definition in CS1. • First feedback on to-be-used-tools.
22/11/2016	<ul style="list-style-type: none"> • Enrol CS2 working team members. • Description of CONNECARE. • Description and consolidation of CS2. • Definition and of roles of professionals in CS2. • Discussion of potential to-be-used tools in the Case identification, Case evaluation, and intervention phases of the CONNECARE process. 	<ul style="list-style-type: none"> • Awareness by all participants about the project and its specific case study, and initial role definition in CS2. • First feedback on to-be-used-tools.



24/01/2017	<ul style="list-style-type: none"> Refinement of roles and workflows in CS1. Refinement of to-be-used tools in the Case identification, Case evaluation, and intervention phases of the CONNECARE process. 	<ul style="list-style-type: none"> Feedback on workflows. Selection of the standard questionnaires for COPD and hearth failure patients. Definition of patient's self-check questionnaires for Case Evaluation. Initial list of interventions to be provided to patients depending on their health status and risk.
24/01/2017	<ul style="list-style-type: none"> Refinement of roles and workflows in CS2. Refinement of to-be-used tools in the Case identification, Case evaluation, and intervention phases of the CONNECARE process. 	<ul style="list-style-type: none"> Feedback on workflows. Selection of the standard questionnaires for Hip / knee arthroplasty patients. Definition of patient's self-check questionnaires for Case Evaluation. Initial list of interventions to be provided to patients depending on their health status and risk.
03/04/2017	<ul style="list-style-type: none"> Summary of the work done during this first cycle. Consolidation of CS1 workflow. First insight on SACM & SMS mock-ups. Compilation of the evaluation forms corresponding to the 1st PDSA cycle. 	<ul style="list-style-type: none"> Resuming and agreeing on the work done during the 1st PDSA cycle in order to give it as input for the next cycle. Detailed feedback on workflows for the implementation of the SACM and its user interface (WP3) and of the SMS and its user interface (WP4). Initial impressions on mock-ups. Fulfilled evaluation forms of all participants.
03/04/2017	<ul style="list-style-type: none"> Summary of the work done during this first cycle. Consolidation of CS2 workflow. First insight on SACM & SMS mock-ups. Compilation of the evaluation forms corresponding to the 1st PDSA cycle. 	<ul style="list-style-type: none"> Resuming and agreeing on the work done during the 1st PDSA cycle in order to give it as input for the next cycle. Detailed feedback on workflows for the implementation of the SACM and its user interface (WP3) and of the SMS and its user interface (WP4). Initial impressions on mock-ups. Fulfilled evaluation forms of all participants.

2.2.2.2 Case study definitions and associated CMNN

Specificities for CS1 and CS2 in Lleida have been discussed in great detail by the working teams throughout the 1st PDSA cycle and a full report of case study definitions and associated CMNN is provided in the annexes (Annex 6.2.2). Case study definitions have been structured by means of the CONNECARE process areas, namely: (i) Case identification; (ii) Case evaluation; (iii) Workplan definition; (iv) Workplan execution; and, Discharge. The following table summarizes the key elements of each area for each case study.



	CS1	CS2
Case Identification		
Inclusion criteria	<ul style="list-style-type: none"> • Age >70 years. • Hospitalized patients. • Moderate to high risk of hospital readmission (GMA/ LACE<7). • Chronic conditions (primarily COPD and/or Cardiovascular diseases). • Non-institutionalized (living at home) • With smartphone and/or WIFI at home. 	<ul style="list-style-type: none"> • Age >70 years. • Patients scheduled for hip or knee arthroplasty. • At least one chronic condition. • At least one hospital visit during last year. • Expected to be discharged at home. • With smartphone and/or WIFI at home.
Exclusion criteria	<ul style="list-style-type: none"> • Patients with psychophysical inability to answer questionnaires. 	<ul style="list-style-type: none"> • Patients with psychophysical inability to answer questionnaires.
Case Evaluation		
Tests & measures	Charlson Index; Pfeiffer Test; NYHA (in case of cardiac insufficiency); GOLD 2017 and CODEX (in case of COPD); Smoking Treatment situation; Accessibility to the treatment; Anthropometric Variables; Situation of dwelling; Ability of the career; Complexity of the patient's treatment; Situation of familiar support; HAD Test; Barthel test; and, Self-care test.	Charlson Index; GMA; Pfeiffer Test; Assistance Information; Anthropometric Variables; ASA Physical Status Classification System; Situation of dwelling; Ability of the career; Complexity of the patient's treatment; Situation of familiar support; HAD Test; Barthel test; WOMAC test; and, Self-care test.
Workplan definition		
Potential interventions	Prescription Vital Signs Monitoring; Prescription Auto check Health Status; Physical Activity Prescription; Patient Education and Training to the Caregiver; and, Social Interventions.	<u>During hospitalization:</u> Physical Activity Prescription. <u>After hospitalization:</u> Physical Activity Prescription; Auto-check Health Status Prescription; Rehabilitation Prescription; Prescription Vital Signs Monitoring; and, Social Interventions.
Workplan execution		
Actions	Vital Signs Monitoring; Answer Auto check Health Status; Physical Activity Monitoring; and, Patient Education and Training to the Caregiver.	<u>Pre-hospitalization:</u> Preoperative anaemia assessment and management; High Blood Pressure Control; Diabetes Control; Verbal Numerical Rating Scale before hospitalization (Paint Test); S-LANSS (Paint Test) <u>During hospitalization:</u> Nutritional Education; Physical Activity Monitoring; Vital Sign Monitoring; Verbal



		Numerical Rating Scale during hospitalization (Paint Test); and, S-LANSS (Paint Test) <u>Post-hospitalization:</u> Nutritional Education; Physical Activity Monitoring; Vital Signs Monitoring; Rehabilitation; Verbal Numerical Rating Scale after hospitalization (Paint Test); S-LANSS (Paint Test); Auto check Health Status; and, Patient Education and Training to the Caregiver.
Discharge		
Forms	Patient discharge form; CONNECARE discharge Form (professionals).	Patient discharge form; CONNECARE discharge Form (professionals).

2.2.3 Groningen (The Netherlands)

2.2.3.1 Meetings and activities

The working teams in Groningen were set-up to represent the heterogeneous nature of the different persons involved in preparing for the clinical studies in this region. In total, there were 17 persons involved in the meetings. For CS1 the profiles of the persons were: two general practitioners, three epidemiologists, one nurse practitioner, two case managers and four IT personnel (one chief executive officer, two chief technology officers, one director business development and one user centred design expert). CS2 involved the following persons: one surgeon, two surgical residents, one chief medical resident, one nurse practitioner, two epidemiologists and one IT expert. In order to progress on the milestones and PDSA cycles three-weekly meetings were held in the University Medical Centre Groningen. The project leader from the department of epidemiology chaired the meetings and provided minutes after each meeting. Minutes were used for internal purposes, e.g. to keep track of actions points but were also summarized in the working team reports. Until the end of 2016 the working team meetings for CS1 and CS2 were held separately. Because of the converging goals and activities starting March 2017 CS1 and CS2 were taken together in one 3-weekly working team meeting. An overview of the main results of each working team meeting is provided in the table below.

Date	Objectives	Results
6/10/2016	<ul style="list-style-type: none"> Define working team members for CS2. Raise awareness for CONNECARE. Prioritize activities for the study release at M18. Discuss IT and technical issues that need to be overcome. Agree on roles and communication in the project. 	<ul style="list-style-type: none"> Awareness by all participants for the project and the goals set for CS2. Begin writing the research protocol for CS2. Discuss patient inclusion, aspects of the intervention, outcome measures and follow-up for the clinical study. Discuss recruitment of a case manager for CS2.



		<ul style="list-style-type: none">• Agree on action points (per person) to be tackled before the next working team meeting.
22/11/2016	<ul style="list-style-type: none">• Define working team members for CS1.• Raise awareness for CONNECARE.• Discuss the planning and actions required for the study release at M18.• Agree on roles and communication in the project.	<ul style="list-style-type: none">• Focus by all participants on the project and the ambitions that we aim to achieve for CS1.• Setting goals for the first steps to be taken.• Begin writing the research protocols for CS1.• Agree on action points (per person) to be tackled before the next working team meeting.
5/12/2016	<ul style="list-style-type: none">• Synchronize activities between clinical and IT partners.• Refinement of the study protocols for CS1.• Discuss the status of the mock-up of the CONNECARE system.• Discuss division of labor.	<ul style="list-style-type: none">• The clinical partners provided feedback on the mock-up and SMS requirements of the system.• Avoid duplication of efforts in writing the research protocols for CS1 (older adults and asthma/COPD patients).• Discuss the decision of the pre-evaluation of the medical ethical review board of the UMCG.• Agree on action points (per person) to be tackled before the next working team meeting.
2/2/2017	<ul style="list-style-type: none">• Discuss the new version of the mock-up of the CONNECARE system.• Division of labor between clinical and IT partners.• Design and planning of the clinical studies (patient recruitment, questionnaire, outcomes, follow-up).• Prepare for virtual PB meeting CONNECARE project.	<ul style="list-style-type: none">• Agreement on division of labor between clinical and IT partners, but also between local IT partners involved in the project.• Discuss the planning of focus group meeting to get input from end-users (both patients and professionals) for dashboard and functionalities of the CONNECARE system and applications.• Agree on action points (per person) to be tackled before the next working team meeting.
16/03/2017	<ul style="list-style-type: none">• Finalize the research protocols for CS1 and CS2.• Discuss the progress made on the focus group meetings.• Finalize the workflows (CMMN diagrams for CS1 and 2).• Provide feedback on the SACM model and selection of digital questionnaires.	<ul style="list-style-type: none">• A decision was made not to submit a full research protocol to the ethical board for CS1.• The workflows (CMMN diagrams) were finalized.• Revisions in the SACM model were proposed by the clinical partners.• Agree on action points (per person) to be tackled before the next working team meeting.



06/04/2017	<ul style="list-style-type: none"> Summarize the activities done during the first PDSA cycle. Provide feedback and discuss the SACM and SMS mock-ups Discuss the activities and functionalities of the CONNECARE app. Prepare for making local IT connections to the CONNECARE system. 	<ul style="list-style-type: none"> Summarizing the work done during the first PDSA cycle and to look forward to activities of the second cycle. Revisions were made in the SACM and SMS systems.
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2.2.3.2 Case study definitions and associated CMNN

	CS1	CS2
Case Identification		
Inclusion criteria	<p>Older adults:</p> <ul style="list-style-type: none"> Age >75 'Robust' adults (INTERMED-E-SA <16) Low levels of frailty (GFI <5). Able to use a smart phone (android/apple) or tablet. <p>Asthma and COPD patients:</p> <ul style="list-style-type: none"> Patients suspected COPD, ACOS or presents with pulmonary symptoms of unknown origin. GOLD classification symptomatic (B and D) Asthma: ACQ >1.5, CCQ ≥1.0 Exacerbation < 1 year Patients or caregivers are in possession of a smart phone (android/apple) or tablet. 	<ul style="list-style-type: none"> Oncological patients aged 65 years or older. Patient or caregiver are in possession of and able to use a smart phone (android/apple). Candidate for elective surgery for a solid tumour. Scheduled for high risk surgery, defined as intracavitary surgery lasting more than 180 minutes. Written informed consent given according to local regulations.
Exclusion criteria	<p>Older adults:</p> <ul style="list-style-type: none"> Long term stays in nursing home Receiving an alternative type of integrated care Participating in another research study <p>Asthma and COPD patients:</p> <ul style="list-style-type: none"> Life expectancy shorter than 12 months Inability to read Participating in another research study 	<ul style="list-style-type: none"> Patients requiring emergency surgical management. Personal time constraints making patients unable to comply to the study protocol. Any physical condition potentially hampering compliance with the study protocol and follow-up schedule, this includes: severe visual impairment, total deafness, insufficient understanding of the Dutch language and preoperative cognitive impairment.
Case Evaluation		
Tests & measures	<p>Older adults.</p> <p><u>Primary end-points:</u></p> <p><u>Health status:</u> EQ-5D, Visual Analogue Scale (VAS) health, two questions from SF-36.</p>	<p><u>Study parameters:</u></p> <ul style="list-style-type: none"> Preoperative parameters: age, gender, primary diagnosis, comorbidity (Charlson Comorbidity Index), the Groningen Frailty Index (GFI) and the Hospital Anxiety and Depression Scale (HADS).



	<p><u>Self-management knowledge and behaviour:</u> Partners in Health scale (PIH). <u>Care utilization:</u> hospitalisations, GP visits, outpatient clinic visits, home visits, emergency department visits (questionnaire). <u>Well-being:</u> WHO well-being index (WBI)</p> <p><u>Secondary end-points:</u> To assess the viability of a new product several other aspects need to be taken into account: <u>Demand:</u> the extent to which the CONNECARE integrated care solution in this specific setting is likely to be actually used by intended recipients. <u>Acceptability:</u> the extent to which the CONNECARE integrated care solution in this specific setting is judged as satisfying to CONNECARE end users. <u>Implementation:</u> the extent to which the CONNECARE integrated care solution can be successfully delivered to intended recipients in this specific setting. <u>Practicality:</u> the extent to which the CONNECARE integrated care solution is obtrusive.</p> <p>Asthma and COPD patients.</p> <p><u>Primary end-points:</u></p> <ul style="list-style-type: none"> •asthma control measured with the asthma control questionnaire (CARAT) •COPD health status measured with the clinical COPD questionnaire (CCQ) •Knowledge about asthma or COPD (health literacy) •Quality of life •Healthcare costs <p><u>Secondary outcomes:</u></p> <ul style="list-style-type: none"> • Satisfaction of the intervention group with the Connecare tool. •Satisfaction of the AC-service healthcare professionals and policymakers with the Connecare tool. 	<ul style="list-style-type: none"> •Perioperative parameters: type of surgery, duration and type of anaesthesia, blood pressure, heart rate and oxygenation. •ICT Fitbit Alta data registration will consist of activity, sleep rhythm, heart rate, energy expenditure and action radius. •ICT App data registration will consist of daily reporting of weight, diet, energy expenditure, temperature, mood, pain, family visits, contact with care institute/general practitioner and feedback of homecare. <p><u>Primary end-point:</u> The percentage of complications detected after discharge before scheduled follow-up compared with care as usual.</p> <p><u>Secondary end-points:</u></p> <ul style="list-style-type: none"> •Postoperative complications during hospital stay and up to 30 days after hospital discharge according to the Clavien-Dindo classification. •Physical performance status will be assessed 3 months postoperatively by the ADL and the IADL questionnaires and handgrip strength and the TUG. •Hospital readmission during the first 30 days (short-term readmission) and 3 months (mid-term readmission). •Quality of life will be measured using the EORTC QLQ C-30 and EORTC QLQ-ELD 14 questionnaires 3 months postoperatively. •Cognitive functioning will be measured by the scores of the Mini Mental State Examination (MMSE), Rey’s Auditory Verbal Learning Task (RAVLT), the Trailmaking Test (TMT) part A and B, Test of Everyday Attention: Elevator Task (TEA), Nederlandse Leestest voor Volwassenen (NLV), Verbal Fluency Task (VFT) and the Digit Span (DS) in comparison to the preoperative scores. •Nutritional status will be assessed by the Nutritional Risk Screening (NRS) and Mini Nutritional Assessment-Short Form (MNA-SF) questionnaires. •Physical activity (IPAQ). •Feasibility and process evaluation. •Health care costs. •Length of hospital stay.
<p>Workplan definition</p>		



Potential interventions	<p>Older adults.</p> <ul style="list-style-type: none"> •Advice on physical activity. •Advice on nutrition. •Advice on social interaction. • Education and training to older adults and the case manager. <p>Asthma and COPD patients.</p> <ul style="list-style-type: none"> •Social support based on diagnosis. •Select information about disease. 	<ul style="list-style-type: none"> • Prescription physical activity • Prescription education for nutrition • Prescription health status monitoring • Intervention proposal by decision support system (DSS).
Workplan execution		
Actions	<p>Older adults.</p> <ul style="list-style-type: none"> •Physical activity information and monitoring. •Nutrition information, monitoring and education. •Social contact information and monitoring. <p>Asthma and COPD patients.</p> <ul style="list-style-type: none"> •Access to personal medical results and selected information. •Lifestyle monitoring: physical activity, nutrition and smoking cessation. •Disease management and monitoring. •Exacerbation: asthma and COPD action plan. 	<p><u>During hospitalization:</u></p> <ul style="list-style-type: none"> •Physical activity monitoring. •Sleep monitoring. <p><u>Intensive monitoring after hospitalization (first 14 days):</u></p> <ul style="list-style-type: none"> •Monitoring of physical activity, nutrition, sleep and health status. •Feedback. •Self-check health status. •Vital signs monitoring. <p>After intensive monitoring (from day 30):</p> <ul style="list-style-type: none"> •Monitoring of physical activity and sleep.
Discharge		
Forms	Patient discharge form; CONNECARE discharge Form (professionals).	Patient discharge form; CONNECARE discharge Form (professionals).

2.2.4 Assuta (Israel)

2.2.4.1 Meetings and activities

Assuta Ashdod Hospital, where the clinical trials will take place, is a new hospital in the process of opening its services. It officially opened its doors on 04/06/17, with services of the outpatient departments only. Elective surgical procedures will begin in September and the ER is scheduled to open in November. The hospital staff is not all on board yet, and the people already working are extremely busy with recruitment and assuring the functioning of all of the hospital's basic systems. The Assuta Ashdod hospital was defined at its conception as a hub and a catalyst for integrated care in the city of Ashdod and established, even before the construction of the hospital began, a collaborative framework with Maccabi Healthcare



Services, which operates a comprehensive community healthcare system and the Municipality of Ashdod, responsible for social services and other support services to city residents.

As part of the establishment of the hospital, monthly meetings of Ashdod Hospital senior staff with Maccabi Southern Region and Maccabi Ashdod have been taking place (7 regular members – 4 doctors, 2 nurses and the CONNECARE project manager).

CONNECARE, which is viewed as part of the process of defining work flows and processes, has always been on the agenda, both to contribute to defining real life processes and to receive ongoing input.

In parallel, internal working teams composed of key personnel deeply involved in the integration processes between Assuta and Maccabi have been working with CONNECARE Staff on both Case Study 1 and Case Study 2. There have been frequent meetings with Assuta and Maccabi team members separately to define the processes in the hospital and in the community in order to tackle the PDSA cycle objectives and to define the functional requirements necessary to enable implementation of Case Study 1 and Case Study 2 in Assuta and Maccabi in Ashdod. A summary of the meetings' objectives and main results is provided below:

Date	Objectives	Results
15/11/2016	<ul style="list-style-type: none"> Introducing CONNECARE to Maccabi's management. 	<ul style="list-style-type: none"> Awareness of all participants regarding the specific cases and processes of CONNECARE Identification of areas for improvement of current processes
06/12/2016	<ul style="list-style-type: none"> Introducing CONNECARE to Assuta's management as part of a major meeting of all the potential players in the Assuta Ashdod/Maccabi Integrated Care system. 	<ul style="list-style-type: none"> Awareness of all participants regarding the specific cases and processes of CONNECARE Identification of areas for improvement of current processes
11/12/2016	<ul style="list-style-type: none"> Meeting with Maccabi Central Integrated Care Staff (Head nurse, Continuity of Care Program (national and regional directors, ICT staff) 	<ul style="list-style-type: none"> Maccabi's definition of expectations for CS1 & CS2 from SMS Maccabi input on workflows for both case studies
21/12/2016 + 11/01/2017	<ul style="list-style-type: none"> Meetings with Maccabi's Southern Region and Ashdod City team members: Presentation and discussion on the first draft of the two case studies processes. Presentation of the SMS Mockups 	<ul style="list-style-type: none"> ASSUTA's document on expectations for CS1 & CS2 from the SMS. Revised version of case studies workflows for case studies 1 and 2.
18/02/2017	<ul style="list-style-type: none"> Meeting of Maccabi's IT staff with eWave in order to assess how interfaces can be developed with existing systems in Maccabi and Assuta 	Concrete actions were agreed as next steps



19/02/17	<ul style="list-style-type: none"> • Definition of the "Complex chronic patient" in Assuta Ashdod 	<ul style="list-style-type: none"> • Revised version of case studies workflows for case studies 1 and 2. • Revised version of Inclusion criteria for case studies 1 and 2.
02/03/17	<ul style="list-style-type: none"> • Meeting of all working group leaders on the various aspects of integrated Care 	<ul style="list-style-type: none"> • Integration of CONNECARE into the overall integrated care process including case management, integration with social services, and IT support.
05/03/17	<ul style="list-style-type: none"> • Meeting of Core Assuta Ashdod and Maccabi Ashdod Staff to define next steps for integrated care implementation 	<ul style="list-style-type: none"> • Agreement on processes for involving community doctors in CONNECARE and Integrated Care.
07/03/17	<ul style="list-style-type: none"> • Meeting with Assuta Ashdod Home Hospitalization and Home Rehabilitation staff 	<ul style="list-style-type: none"> • Plan for integration of home hospitalization and home rehabilitation into CONNECARE as options for transitional care from hospital to community.
26/03/17	<ul style="list-style-type: none"> • Meeting with Maccabi Ashdod staff (doctors, nurses, managers) • Summarize the activities done during the first PDSA cycle. 	<ul style="list-style-type: none"> • Plan for involving multidisciplinary clinical staff in both the hospital and the community in integrated care and CONNECARE. • Report on First PDSA Cycle

2.2.4.2 Case study definitions and associated CMNN

Specifications for CS1 and CS2 in Israel have been discussed in detail by the working teams throughout the 1st PDSA cycle. The working teams gave ongoing inputs on the functional needs and preferences of the system users, medical staff and patients.

The Case study definitions have been structured by means of the CONNECARE process areas, namely: (i) Case identification; (ii) Case evaluation; (iii) Work plan definition; (iv) Work plan execution; and, (v) Discharge. The following table summarizes the key elements of each area for each case study. A full report of case study definitions and associated CMNN is provided in the annexes (Annex 6.2.4).

	CS1	CS2
Case Identification		
Inclusion criteria	<ul style="list-style-type: none"> • Age >70 years. • Maccabi members • Hospitalized patients moderate to high risk early of readmission (Poly-pharmacy, at least 1 non-elective hospitalizations or ER Visits during the past year, Malnutrition, Elements of dependency/socio-economic status). • LACE>7 • Expected to be discharged back to the community. 	<ul style="list-style-type: none"> • Candidates for elective major surgery. • Age >70 years. • Maccabi members • Expected to be discharged back to the community. • ASA level 2 or 3. • At least one chronic illness. • Have WIFI or cellular network at home and has basic technology experience with mobile apps.



	<ul style="list-style-type: none"> Have WIFI or cellular network at home and has basic technology experience with mobile apps. 	
Exclusion criteria	<ul style="list-style-type: none"> Patients with cognitive impairment 	<ul style="list-style-type: none"> Patients with cognitive impairment
Case Evaluation		
Tests & measures	Charlson Index; Health assessment by community Doctor; Sf-12, HAD Test, Barthel, EQ5D and CONNECARE Consensus measures.	Charlson Index; Full InterRAI Geriatric screening; Health assessment by Surgeon and/or Anaesthesiologist; Sf-12, HAD, Barthel, EQ5D and CONNECARE Consensus measures.
Workplan definition		
Potential interventions	<p><u>After hospitalization:</u> Hospital Discharge Plan + Family doctor's orders including some or all of the following, depending on patient's status and condition: Vital Signs Monitoring / Remote patient self-monitoring; Physical Activity Prescription - Walking Prescription; Rehabilitation Prescription - physical or cognitive exercise; Education & Training for patient and Caregiver; Social interventions; Medication Adherence; Nutritional Instructions; Calendar assignments; Diagnostic tests; Pain Test</p>	<p><u>Pre-habilitation:</u> Pre-habilitation Plan; Intervention prescribed Surgical Department with input from the family physician, and physical therapy including: Vital Signs Monitoring; Pre-habilitation Prescription - physical or cognitive exercise; Walking Activity Prescription; Medication Adherence; Nutritional Instructions / Education / Dietary intervention; Auto check Health Status; Social interventions; Calendar assignments; Patient and Caregiver Education and Training; relevant Diagnostic tests; Pain Test</p> <p><u>During hospitalization:</u> Intervention prescribed by InterRAI or other interventions dictated by patient status post-surgery</p> <p><u>After hospitalization:</u> As in CS1</p>
Workplan execution		
Actions	Respective to the work plan definition	Respective to the work plan definition
Discharge		
Forms	Patient discharge form; CONNECARE discharge Form (professionals).	Patient discharge form; CONNECARE discharge Form (professionals).

2.3 Main commonalities and differences for CS1 & CS2 across CONNECARE sites

2.3.1 Overall Commonalities across Sites

The final iteration of the Case studies in the four sites has been heavily influenced by real life implementations of integrated care in each of the sites. The overall nature of the case studies remain the same in all sites:

- Case-study 1 will focus on community-based management of complex chronic patients (CCP).

- Case-study 2 focuses on integrated management of patients with chronic illnesses undergoing major elective surgical procedures.

Case studies in all of the sites follow the CONNECARE general workflow definition comprised of the following stages:

- (i) Case identification.
- (ii) Case evaluation.
- (iii) Workplan definition.
- (iv) Follow-up event handling.
- (v) Discharge.

All of the cases will implement a digitally supported Smart Adaptive Case Management approach (SACM) and all of the cases will implement a Self-Management System (SMS) for the patient and/or his/her primary caregiver in the form of an application that will operate on a smart phone and/or a tablet. In all cases, the work plan definition will be entered into the SACM. In all of the cases, a digital framework will transmit the patient work plan from the SACM to the SMS in the form of Tasks for the patient to perform and the execution of the work plan by the patient will be transmitted back to the SACM to enable follow-up event handling – that is adapting the work plan to the changing status and needs of the patient.

2.3.2 Differences among Sites

2.3.2.1 Study Description and Study Design

All of the sites will have an intervention and a control group for both cases but there will be differences among the sites in the description and study design for both cases:

Case Description for Case Study 1

IDIBAPS	LLEIDA	ASSUTA	GRONINGEN
Unplanned admission to hospital, discharge to <u>home hospitalization</u> , as well as direct admission to <u>home hospitalization</u> from home or ER	Unplanned admission to hospital, discharge to home with integrated follow up	Unplanned admission to hospital, discharge to home with integrated follow up that can include home hospitalization, home care	Patients in the Community in either the Embrace Program or the AC Telehealth program

Study Design of Case Study 1

IDIBAPS	LLEIDA	ASSUTA	GRONINGEN
Observational study with a matched control group.	Observational study with a matched control group.	Matched intervention – control group study.	Feasibility study with parallel group design, randomization 1:1.



Case Descriptions for Case 2

The patient sample in all cases in all sites will include patients with least one chronic disease, scheduled for a major elective surgical procedure and expected to be discharged home. However, the sites differ in terms of the specific surgical procedures and even relative patient complexity:

IDIBAPS	LLEIDA	ASSUTA	GRONINGEN
Esophagectomy, gastrectomy, colorectal major surgery, Whipple surgery, major pancreatic resection, hepatic resection, or bariatric surgery	Orthopaedic patients, including Hip and Knee arthroplasty patients	All major elective surgical procedures- general surgery, orthopaedic, gynaecology and urology	Cancer patients - Candidate for elective surgery for a solid tumour under general anaesthesia
ASA 3-4	ASA 2-3	ASA 2-3	ASA >3
Age >70	Age 70 unless younger needed for sample size	>70	>65

Study Design of Case Study 2:

There are also differences in study design among the sites

IDIPAPS	Lleida	ASSUTA	GRONINGEN
Pragmatic randomized clinical trial (pRCT) with a random allocation to intervention (CONNECARE integrated care solution) or control arm (standard pre- and post- surgical proceedings) in a ratio 1:1.	Pragmatic randomized clinical trial (pRCT) with a random allocation to intervention (CONNECARE integrated care solution) or control arm (standard pre- and post- surgical proceedings) in a ratio 1:1.	Matched control group study. The Intervention group will consist of patients scheduled for elective major surgery in the Assuta Ashdod hospital that meet the inclusion criteria. The matched group will be selected from Maccabi's database and will be patients who are matched 1:1 with the intervention sample.	A pragmatic randomized controlled trial (RCT) design will be followed (blind RCT 1:1 with independent evaluation).

2.3.2.2 Intervention

While all of the sites plan to implement a "prehabilitation program" prior to surgery that will include, prescriptions for walking, other physical activity, nutrition, medication adherence, pain autocheck, and psychological support there are differences in the nature of the program that the sites plan to implement.



For example, IDIPAPS, Assuta and Groningen will use the SMS/Fitbit. Lleida will not be using the SMS/Fitbit but will implement their existing prehabilitation program.

All sites plan to monitor and provide integrated care post-discharge but they differ in length of time for planned active Monitoring and Follow up: Groningen plans 14 days unless complications require more, IDIPAPS and Lleida have not defined a time period and Assuta plans active Monitoring and Follow up for 3 months post discharge. There are also some differences among the sites as to the content of post-discharge follow up:

IDIPAPS	Lleida	ASSUTA	GRONINGEN
Physical Activity prescription and monitoring Motivational messaging Educational material	Nutritional Education; Physical Activity Monitoring; Vital Signs Monitoring; Rehabilitation; Verbal Numerical Rating Scale after hospitalization (Paint Test); S-LANSS (Paint Test); Autocheck Health Status; and, Patient Education and training to the Caregiver.	Vital Signs Monitoring / Remote patient self-monitoring; Physical Activity Prescription - Walking Prescription; Rehabilitation Prescription - physical or cognitive exercise; Education & Training for patient and Caregiver; Social interventions; Medication Adherence; Nutritional Instructions; Calendar assignments; Diagnostic tests; Pain Test	Prescription physical activity Prescription education for nutrition Prescription health status monitoring Intervention proposal by decision support system (DSS).

2.3.2.3 Patient Assessment

Patient Assessment in the CONNECARE pilot sites serves two main purposes;

1. Adaptive Case Management: The definition of the patient care plan (work plan), the ongoing monitoring of patient compliance with the work plan and its effectiveness, and the adaptation of the work plan to changes in patient status
2. Evaluation of the effectiveness of the CONNECARE Integrated Care Process

In all of the sites, there are three patient assessment domains:

1. Clinical Assessment
2. Functional Assessment (physical and cognitive)
3. Social Assessment

Each of the sites has chosen to implement a variety of different assessment instruments to assess the above domains. The assessment instruments chosen reflect, in part, the specific nature of the intervention and the specific setting unique to each site, and, in part, some of the secondary research goals of the project in each site. The specific instruments are listed above for each site in Section 2.2.



In order to enable a common foundation for patient assessment that will enable comparisons among the sites as well as an overall evaluation of the CONNECARE Integrated Care pilots, and to support the functional and non-functional definitions for the CONNECARE technological platform and components, the following tools and measures will be common to all sites for both cases:

1. Assessment tools (see **Annex 6.2** for complete list of tools)

- Charlson index
- ASA Physical Status Classification System (CS2 only)
- Hospital Anxiety and Depression Scale (HAD)
- SF 12 Health Survey
- Barthel Index
- EuroQol five dimensions questionnaire (EQ5D)

NOTE: The HAD, SF12, Barthel Index and EQ5D will also be used as auto tests in the SMS – to be completed at required intervals (in accordance with the work plan) by the patient or his/her primary caregiver.

2. In addition to the above five tools, the following **measures** will be common to all sites, regardless of the multiplicity of questionnaires used. In all of the sites, measures obtained by the various instruments used (not including the above 6 that will be common to all) will be converted into the following measures

a. Activities of Daily Living (ADL)

- Bathing / showering
- Personal hygiene /grooming
- Toilet hygiene
- Dressing
- Self-feeding
- Walking
- Mobility

b. Instrumental Activities of Daily Living (IADL)

- Cleaning and maintaining the house
- Preparing meals
- Stairs
- Shopping for groceries and necessities
- Moving within the community
- Taking prescribed medications

c. Residence / Situation of dwelling

- 1) Type of residence
 - Living at home independently
 - Living at home with partial support
 - Living at home but in need of complete support
- 2) Residential arrangements
 - Alone
 - With spouse

Scale for ADL and IADL:

1. Totally independent / Not limited at all
2. Lightly dependent / limited
3. Moderately dependent / limited
4. Very dependent / limited
5. Completely dependent / limited



- With child
 - With other relative(s)
 - With non-relative(s)
- 3) Condition of the Residence
- Accessibility – good/poor
 - Tidiness – good/moderate/poor,
- 4) Patient Perception of Adequacy of support
- Adequate
 - Inadequate
 - Type of Support : weekly partial support/daily partial support/full 24 hour support
- d. Cognitive Status**
- Ability to remember or recall
 - Not capable at all
 - Bad memory
 - Moderate memory
 - Good memory
 - Excellent memory
 - Orientation
 - Not orientated at all
 - Bad orientation
 - Moderate orientation
 - Good orientation
 - Excellent orientation
- e. Communication**
- Hearing (With hearing appliance normally used)
 - No hearing
 - Severe difficulty—Difficulty in all situations
 - Moderate difficulty—Problem hearing normal conversation, requires quiet setting to hear well
 - Minimal difficulty—Difficulty in some environments (whispering)
 - Adequate—No difficulty in normal conversation, social interaction and TV
- Hearing aid used – Yes/No**
- Vision (With glasses or with other visual appliance normally used)
 - No vision
 - Severe difficulty - sees only light, colours, shapes
 - Moderate difficulty—Limited vision; not able to see newspaper headlines, but can identify objects
 - Minimal difficulty—Sees large print, but not regular print in newspapers/books
 - Adequate—Sees fine detail, including regular print in newspapers/books
- Visual appliance used – Yes/No**
- Ability to express oneself (Expressing information content—both verbal and nonverbal)
 - Rarely or never understood
 - Sometimes understood—Ability is limited to making concrete requests
 - Often understood—Difficulty finding words or finishing thoughts AND prompting usually required
 - Usually understood—Difficulty finding words or finishing thoughts BUT if given time, little or no prompting required
 - Understood—Expresses ideas without difficulty
- f. Incontinence**
- Full control
 - Sometimes loses, or needs an accessory
 - No control at all

**g. Medications**

- More than 4 tablets/day? Yes/No
- More than 4 different medications/day or regularly? Yes/no
- Is the preparation of medication difficult? Yes/No
- List of medications prescribed

h. Smoking

- Current
- Former
- Never

i. Alcohol consumption

- More than 2 standard drinks / day? Yes/No
(A standard drink = 10 gr alcohol)

2.4 Evaluation

The evaluation of the 1st PDSA cycle was performed during February - March 2017. Briefly, all working team members for each case study and site were asked to complete an evaluation form inquiring about their perception of the progress in 4 of the CONNECARE evaluation domains defined in D2.1: Patients and professionals' engagement and perspectives; New care models and supporting ICT; Safety, ethical, and legal aspects; and, Maturity of the technology. The evaluation form used is attached in Annex 6.3.

The Clinical effectiveness and costs domain was not included in the 1st PDSA evaluation because it will not be available until a first deployment wave is completed.

Up to 10 and 22 evaluation forms were collected in Barcelona and Lleida, respectively. On the other hand, given their specificities, Groningen and Israel provided a single form summarizing the views of all working team members. In this sense, Groningen provided a form for each CS and Israel a single form summarizing both case studies (CS1&CS2). All completed evaluation forms were uploaded into a REDCap database, and descriptive statistics were performed. **Figure 1 to Figure 5** summarize the results of the 1st PDSA cycle.

Briefly, the Patients and professionals' engagement and perspectives; New care models and supporting ICT; and, Safety, ethical, and legal aspects domains obtained high scores, indicating the perception of working team members of the project advancing in the adequate direction. On the other hand, the low scores in the Maturity of the technology domain reflect the perception on the degree of fulfilment of the CONNECARE project, which is in accordance to the project's timeline, and expected to increase in upcoming PDSA cycles. In summary, these initial scores reflect the adequate progress of the project, and will be the base for comparison in future PDSA cycles.

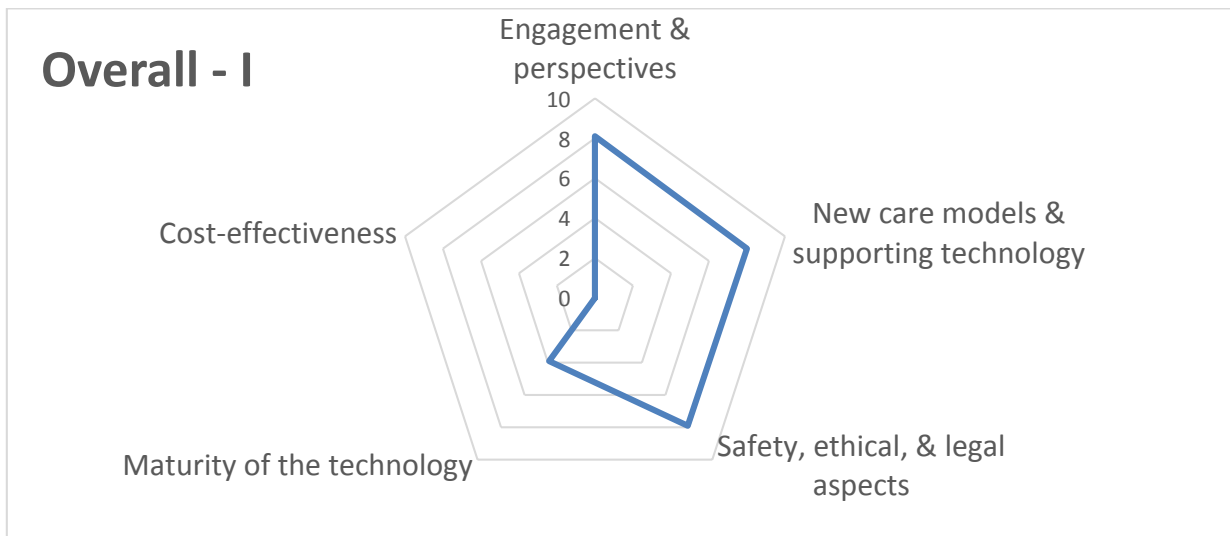


Figure 1. Overall scores given to each of the CONNECARE evaluation domains by working team members during the 1st PDSA cycle.

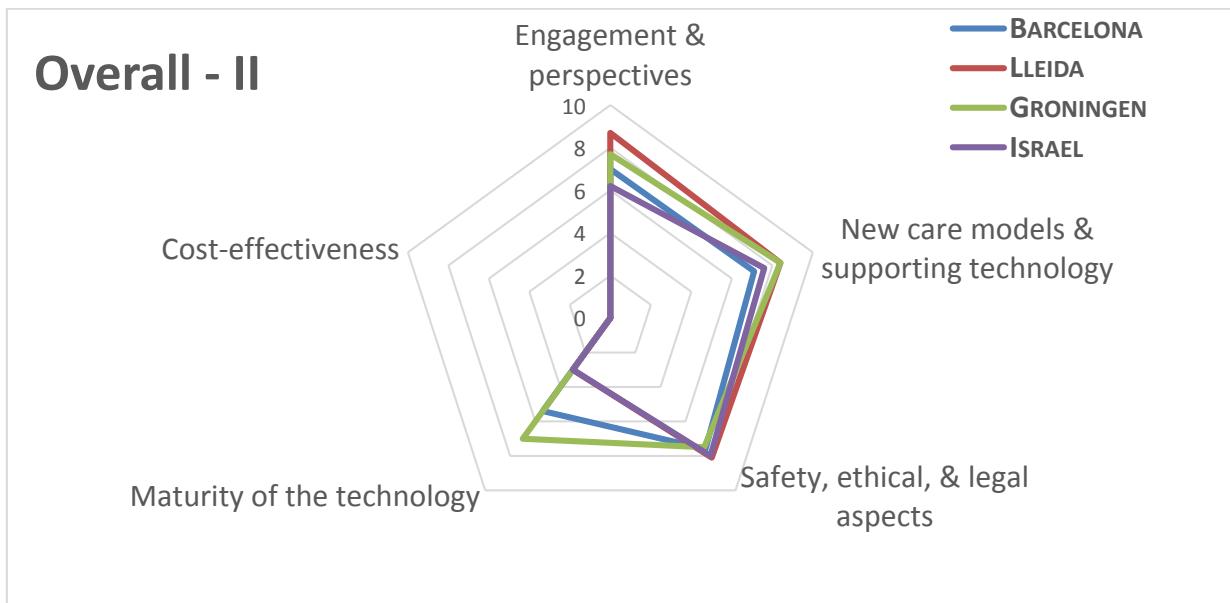


Figure 2. Overall scores given to each of the CONNECARE evaluation domains by working team members during the 1st PDSA cycle, according to each clinical site.

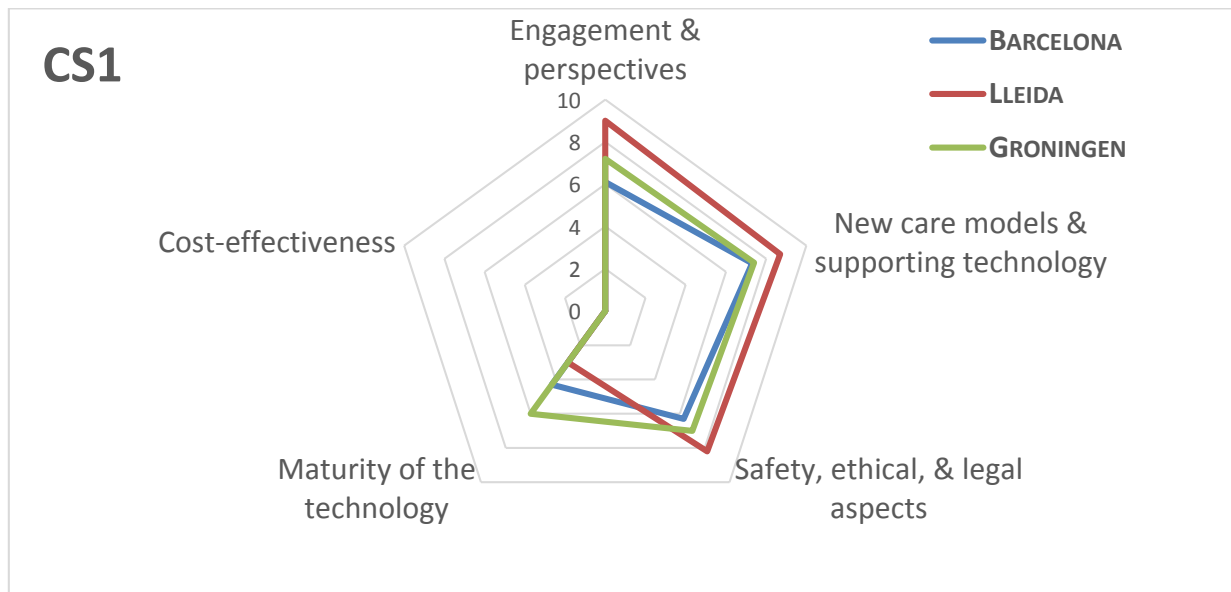


Figure 3. Overall scores for case study 1 given to each of the CONNECARE evaluation domains by working team members during the 1st PDSA cycle, **according to each clinical site.**

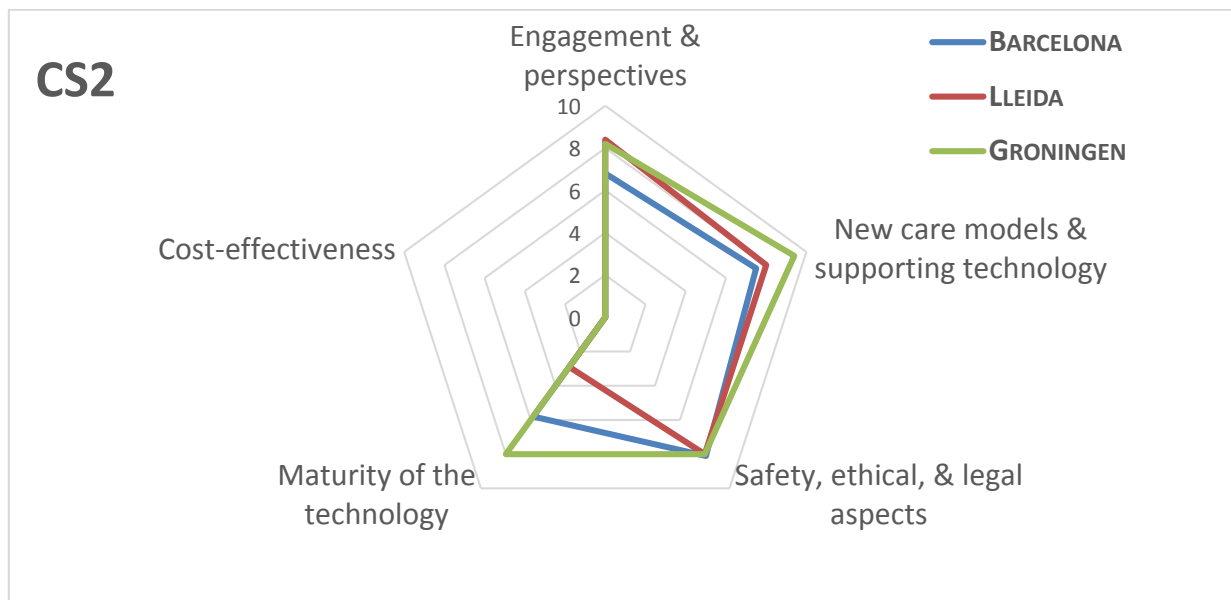


Figure 4. Overall scores for case study 2 given to each of the CONNECARE evaluation domains by working team members during the 1st PDSA cycle, **according to each clinical site.**

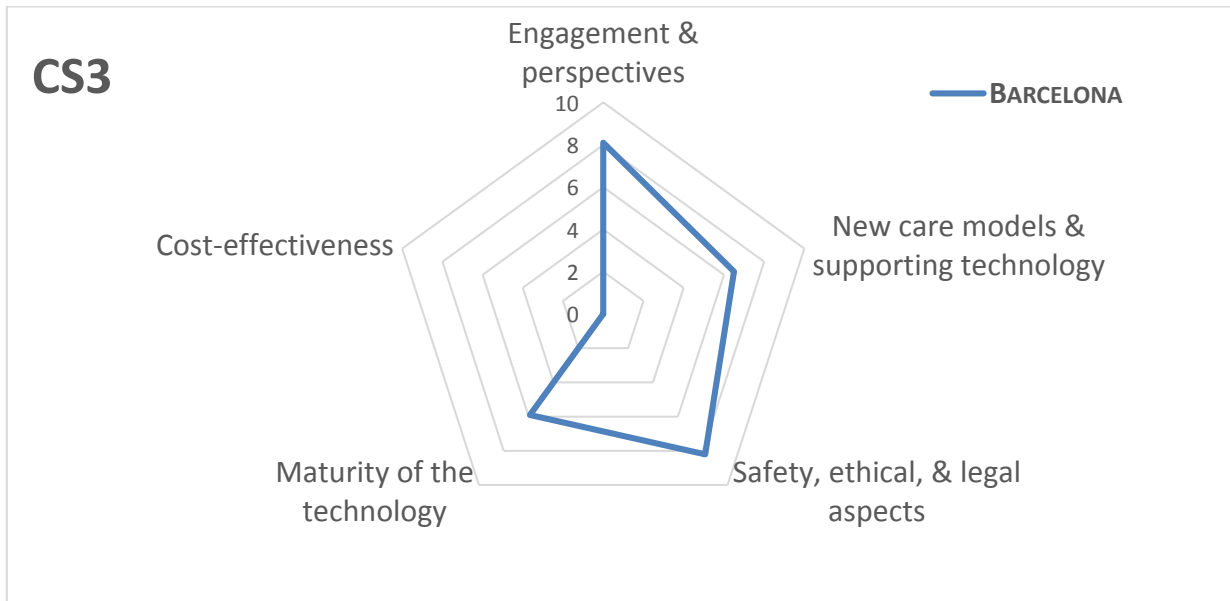


Figure 5. Overall scores for case study 3 given to each of the CONNECARE evaluation domains by the Barcelona working team members during the 1st PDSA cycle.



3. Upcoming PDSA cycles

3.1 2nd PDSA cycle

The 2nd PDSA takes place between April 2017 and September 2017, as a direct continuation of the 1st PDSA cycle. While the 1st cycle focused on process definitions and specifications, the 2nd cycle's main aim is to assess SACM and SMS mock-ups wireframes in detail with all stakeholders in order to provide feedback, comments, suggestions, and criticisms to technical partners developing the study-release version of the CONNECARE platform. Therefore, the implementation of successful exchanges of information between clinical and technological partners is the key for this cycle's success. In this sense, the work done during the 1st cycle is facilitating this challenge, and reports so far point towards satisfactory results. The most updated reports are attached in **Annex 6.1**.

3.2 PDSA cycles during the Refinement and Fine-tuning phase

CONNECARE Refinement and Fine-tuning phase will take place from October 2017 (M19) to the end of the project (M42). The main goal of this phase will be the support of technological research activities in WP3 and WP4 and the evolutionary integration in WP5 by means of tests at increasingly higher scale, thus replacing the "small-scale testing" principle by a broader degree of implementation involving larger groups patients and staff. Unlike the Co-design phase, PDSA Cycles in the Refinement and Fine-tuning phase will actually include the testing of an already operational product, even if some of its features will not be fully developed until the end of the project. This key difference will require the implementation of actions like focus groups of either patients or professionals, as ready-to-be-tested features will continue to be developed and only real end-users may provide truly valid valuations. Although these differences with the Co-design phase cycles, the structure of the cycles themselves will be exactly the same, as defined in the Cookbook (D2.1).



4. Summary of Requirements

One of the goals of PDSA cycles, in particular of the first one, was to define all the requirements for the two main subsystem to be develop in WP3 (SACM) and in WP4 (SMS). In this Section we present a summary of functional and non-functional requirements for both systems, as well as requirements in terms of graphical user interfaces. Similarly to case study definitions, SACM and SMS functional requirements have been strongly influenced by the CONNECARE ACM design and existing real-life deployments of integrated care in each of the sites, which is described in detail in deliverable *D2.2. Adaptive Case Management Design*.

4.1 Requirements for the SACM

4.1.1 General functional requirements (GFR)

GFR1. The SACM is meant to serve all the professional staff involved in a case (e.g., case manager, specialist, nurse); All the professionals involved in a case will access the SACM to enter data, compile questionnaires, manage data, prescribe and monitor task, etc.:

- Case manager. S/he creates the case, indicates the tasks, and delegates their ownership to the corresponding specialists,
- Doctor. Different specialists will be involved in each case according to their specific expertise and the specific case.
- Nurse. S/he will be involved in several steps of the process giving support to both specialists and patients.
- Social worker. Depending on the case and on the case, also social workers should be involved to give social support and to follow issues more related with social aspects.
- Patients will modelled inside the SACM to ensure access control. Nevertheless, they would not have direct access via SACM interface.

GFR2. In the following we will refer to “users” to indicate any professional that has access to the the SACM users role based access control. The SACM needs to be very user friendly and hence very simple to use.

GFR3. The SACM must be integrated with the HIS (via the DHF) in order to retrieve relevant data and information².

² This feature will be available in the FinalRelease of the CONNECARE system, not in the Study Release expected at M18 (September 2017).



- GFR4.** Case creation: The Case Manager may create a new case, based on case templates. After creation, all elements will be empty and the Case Manager will fill them (Case Identification). The Case Manager assigns the tasks to the responsible professionals. In case that it is not possible at creation time, this assignment could be done afterwards. Each case refers to a given patient.
- GFR5.** Case History: The system keeps track of all executed tasks, resulting data can be accessed at any time.
- GFR6.** Patient creation: The Case Manager creates a new patient in the system. The SACM requests all the needed patient data via an API from the CONNECARE Message Broker. The SACM stores the link and a local copy of the requested patient data. A patient is internally mapped to a user of the SACM system.
- a. Patient data to be inserted are:
 - b. First name
 - c. Surname
 - d. ID
 - e. Age
 - f. Gender
 - g. Marital status
 - h. Socio-cultural level (optional)
 - i. Email
 - j. Phone n^o (home)
 - k. Phone n^o (cell)
 - l. Language
- GFR7.** Search for an existing patient: The Case Manager or any professional may search for an existing patient. The SACM provides an API that handles search requests for patients based on their attributes (e.g., her/his name, patient ID) that are locally stored for them.
- a. Access to relevant documents: A case manager can attach and delete relevant files to a specific case. Professionals that have the assigned role are also granted access to the attached documents.
- GFR8.** Add a user in a team: Each case is managed by a team of professionals. The Case Manager may add a new team member
- a. Remove user from a team: A Case Manager may manage a team and remove one of the members, in case her/his is not involved in the case, anymore. Once a user is removed, s/he is not able to access the case or the previously assigned group anymore. The SACM also provides a functionality to disable a user account completely. Additionally, the SACM will also provide the Case Manager with a functionality to remove and change the role set of a user.



- b. Retrieve a list of team members including their roles: The SACM provides a functionality to give the possibility to retrieve all assigned team members of a certain case.

GFR9. Search for cases: The SACM provides a functionality to search the case corresponding to a given patient.

GFR10. Questionnaire compiling: During the phase of Case Identification and Case Evaluation, different forms have to be filled by the corresponding professional. Results from those questionnaires will be used to define the corresponding work plan.

- a. Prescription: During the phase of Workplan Definition (i.e., follow-up and event handling), professionals may prescribe self-check questionnaires, physical activity and/or measurements (vital signs, drugs). Moreover, during the phase of Case Evaluation some self-check questionnaires could be also to be asked to compile.

GFR11. Monitoring: During the phase of follow-up and event handling, professionals may access to the data stored by the SACM to monitor all the prescribed activities.

- a. Warnings: It is possible to define specific alerts that will be triggered by the CONNECARE Self-Management System (SMS) in any anomalies happens. An anomaly occurs when a patient did not complete an assigned mandatory task before the defined due date (e.g., to fill a self-check questionnaire) or if some measured vital signs exceeds a given threshold. Warnings will appear in the first page of the SACM user interface to be easily reachable by the user.
- b. Calendar and agenda management: In each step of the process, the Case Manager or a professional belonging to a giving case may add an appointment in her/his calendar. The appointment may refer to a meeting with other professional(s) involved in the same case or a required visit or check to the patient.

GFR12. Messaging: Professionals should be able to communicate within a case. Communication could be among the professionals involved in a case or directly with the patient.

GFR13. Independently of site-specific usability requirements, common requirements indicated the importance of a private messaging system between patients and clinicians and among clinicians.

GFR14. An app for the case manager. While the plan is that the information generated by the apps will be fed back to the clinicians via the CONNECARE system, there would be a distinct advantage for the case manager to be able to monitor what is happening to the patient via an app on her smartphone – so she doesn't have to be at a computer and she can access the information any time anywhere. There would also be a distinct advantage to app-to app communication between the case manager and the patient including Whatsapps or virtual visits.



4.1.2 Summary of specific functional requirements

4.1.2.1 Modelling of adaptive case management processes

The SACM system will be used to support several case management processes, all of them composed of different tasks, requiring different data objects. To this end, SocioCortex – the system behind the SACM system – should implement the concept of workspace. On an abstract level, a workspace is a separated, isolated unit which contains data. This technique would enable the SACM system to handle multiple clinical partners in one system installation. Each clinical partner will have its own workspace and due to proper authentication and authorization, a user will not have access to workspaces he or she is not assigned to.

Initially the workspace and the case management process definition template will be created by a domain and technical expert before the system is deployed for production usage. To this end, each clinical partner has to set and define stages, tasks, and associated data objects in advance, as already annexed to this deliverable. Moreover, roles and user group mappings with their corresponding rights will also need to be specified, as shown in **Table 1** for CONNECARE case studies in all sites.

Table 1 - User groups at the different clinical partners

Role	Barcelona			Lleida		ASSUTA		Groningen		
	CS1	CS2	CS3	CS1	CS2	CS1	CS2	CS1 - embrace	CS1 - AC service	CS2
Patient	F	F	F	F	F	F	F	F	F	F
Case Manager	A-D	A-D	A-D	A-E	A-E	A-B	A-B	A-D	A-D	A-D
Clinician	A-D	A-D	A-D	A-E	A-E				A-B	A-D
Nurse	A-B	A-C	A-C	E	E					A-B
Anesthesiologist		A-D	A-D		A-B					
Administrative officers	A									
Physician									A-B	A-B
Physiotherapist		A-C	A-C		A-B					
Psychologist		A-B	A-B							
Nutritionist		A-B	A-B							
Social worker				A-B	A-B			A-B		
Primary Care Clinician					A-B					
Lab technician									A-B	
Local pulmonologists									A-B	
Data manager	A	A	A					A-B		
Site Administrator	E	E	E					E	E	E
Researcher	A	A	A					A-B		

Access Levels

- A) Case Viewer(Read Only Access)
- B) Case Worker(Complete Tasks)
- C) Case Owner(Create, Read, Update, Delete)
- D) Manage Patients(Create, Read, Update, Delete)
- E) Manage Professionals(Create, Read, Update, Delete)
- F) Patient(only used for case assignment - no read access)

In case it is necessary to have a special visualization for a data object (e.g. a diagram for a time series), a flag in the SACM Meta Model will be used. However, the format of the actual visualization will not be stored in the Meta Model but rather directly integrated into the client.

4.1.2.2 Modelling tasks and stages

On a high level of abstraction, a task is anything that must or optionally can be done to complete a case. For example, taking the blood pressure, doing sit ups, taking pills etc. are all tasks that could be necessary for the recovery of a patient. In the context of the SACM system, any task will be pre-defined in the case management process definition template. Within the system, tasks' data objects will be usually represented as forms with fields and values.



There will be two types of tasks:

- **“Human Tasks”** are tasks which are manually processed by the clinician, i.e. the clinician must actively change the values of the task.
- **“Automated Tasks”** are tasks which are not directly processed by the SACM but by another instance instead. One example of such tasks are the ones processed by the Self-Management System (SMS). The SMS directly interacts with the patient and is used to gather data from him or her. Let’s assume the following scenario: In the SACM exists an automated task “Do 6 sit ups every day”. The patient would see the task in the SMS application and send the current task information, i.e. how many sit ups are done, back to the SACM. A patient could use multiple mobile applications to track the status of his tasks.

Each task will have a certain life cycle which is represented by its state. Only one state can be active at a time. Altogether, there will be 5 different possible states that a task could have:

- **Available:** Every instantiated task starts with this state.
- **Enabled:** The task is ready to be activated and all mandatory preconditions are fulfilled.
- **Active:** The task is enabled and currently active.
- **Completed:** The task was successfully completed. Once a task reach that state its values cannot be changed anymore and are considered as final.
- **Terminated:** The task was aborted. The values cannot be changed anymore, too.

Another important concept besides tasks are stages. Basically, a stage is a group of tasks and can contain further (nested) stages as well. The state of a stage depends on its tasks and sub-stages. A stage is considered as complete when all tasks and sub-stages, respectively, are completed.

Not all tasks and stages can be mandatory. The SACM distinguishes between mandatory and optional tasks and stages. A case management process cannot be completed if there are still opened mandatory tasks. Optional tasks and stages can be skipped and are not required for completion of a case management process.

It must also be possible to assign certain preconditions to the tasks. All tasks with assigned preconditions should only be “enabled” when all the mandatory preconditions, called sentries, are fulfilled. However, it could be possible to combine multiple preconditions with “AND” and “OR” operators. As soon as the whole Boolean expression is evaluated to true, the corresponding task or stage can be enabled.

Not all tasks may consist of just a single action. It is also possible to have repeatable tasks in the system. Repeatable tasks are handled equally to single action tasks with the only difference that such tasks also have a counter which indicates the current iteration. However, only sequential tasks can be repeatable.

4.1.2.3 Clinical Decision Support

As extensively described in Deliverable D2.3. *Patient-based Health Risk Assessment and Stratification*, development of adequate clinical decision support systems (CDSS) to support CONNECARE adaptive case management processes will depend on three main factors: i) Robustness of computational predictive risk stratification models feeding the CDSS; ii) Refinement of the CDSS generated with clinical feedback; and, iii) Appropriate alerts and recommendations to clinicians as well as to the patients themselves through user-friendly interfaces integrated into the case management processes.

The CDSS functionalities articulate along three main dimensions:

1. Risk assessment and stratifications meant to (i) support clinicians in assessing the risk of patients with the respect to desired metrics, and (ii) partition patients into risk groups based on the individual assessments.
2. Risk stratification and mapping is meant to support clinicians in assigning patients to the most adequate medical facilities, both accounting for (i) healthcare services compliancy to the patient comorbidities, and (ii) spatial proximity to patients' customary movement routes.
3. Adaptive clinical pathways suggestions are meant to support clinicians in (i) defining the clinical pathway to assign to the patient, and (ii) adapting such a treatment to both patient's peculiarities and unexpected contingencies.

Focussing on the first feature³, the main requirements expressed by clinical partners are:

- Risk assessment and stratification must be based on prediction and stratification models widely accepted in the healthcare community, including statistical and machine learning approaches as long as they have been properly evaluated. This encourages clinicians to trust the system.
- The risk assessment and stratification services must be available from the SACM interface, not as a separate software tool. This avoids the cognitive overhead for clinicians implied by learning different user interfaces.
- The CDSS must be able to make predictions based on both already trained assessment and stratification models and models trained on its own. The first operation mode ensures availability of models thoroughly evaluated by the healthcare community, while the second one enables experimenting and researching with novel assessment and stratification approaches.

As thoroughly and technically described in D3.3. *First Screening and Risk Stratification DSS*, the CDSS will be open to continuous improvements by the data scientists and technical staff working together with clinicians to produce increasingly refined assessment and stratification models, both based on locally

³ The first feature will be available in the Study Release expected at M18 (September 2017), the others at M36 (April 2019).



available data generated by the specific site, or on the globally available data generated within the CONNECARE project itself.

4.1.3 Requirements of Graphical User Interfaces for Professionals

Based on Balsamiq mock-up⁴, wireframes for the Smart Adaptive Case Manager system (SACM) have been proposed to clinicians and updated iteratively according to the CONNECARE co-design approach. In total, the iterative process consisted on 15 versions of mock-ups shared between ADI and the rest the consortium.

Feedback ranged from specific comments on how to display information –e.g., warnings and messaging are required in the access page to be visible and accessible once the user is logged in (see **Figure 6**); to more detailed comments on how perform prescriptions (see **Figure 7**) and summarize in a unique view all the relevant information (see **Figure 8** for the proposal by IRBLL and **Figure 9** for the proposed mock-up). How to manage the clinical process was also addressed in order to have clear at each step the current task of the process, tasks already finished, as well as those that are to be done (see **Figure 10**).

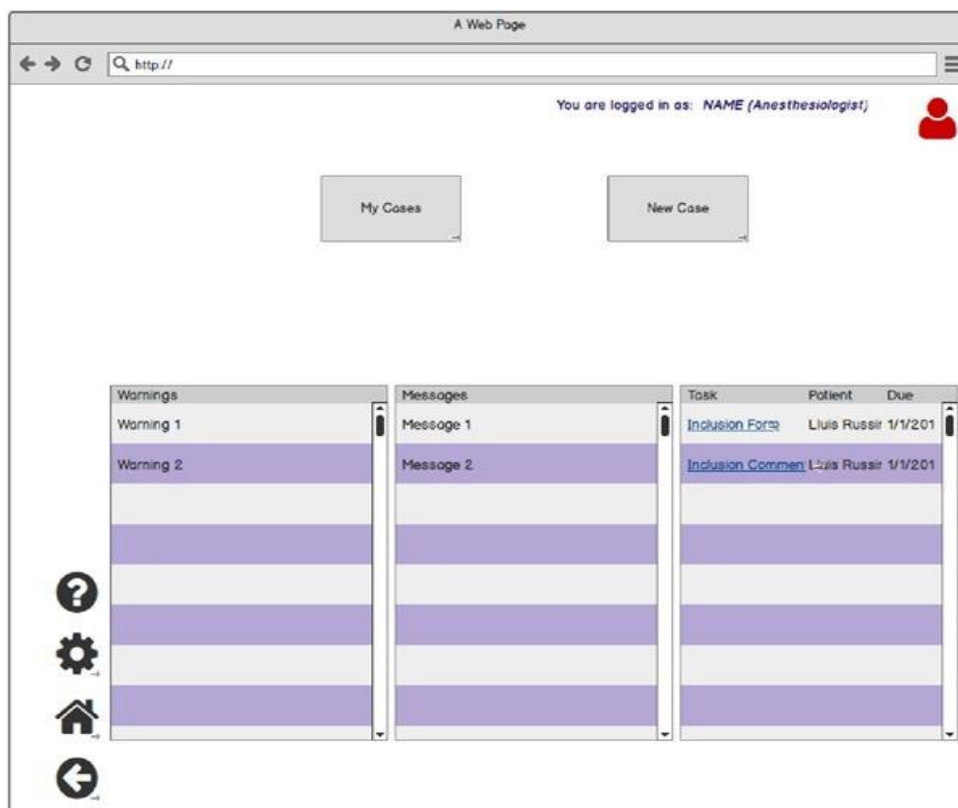


Figure 6. Mock-up of the first page once logged in.

⁴ <https://balsamiq.com/products/mockups/>



Lluís Russiny **Age: 81** **You are logged in as: Dr. Connecare (Clinician)**
Diagnosis: COPD

Summary **Process** Team Notification Forum

Case Identification
Case Evaluation
Workplan definition
Workplan execution
Discharge

Start Date End Date
Frequency Days

Config value #1
Config value #2

Alert
Minimum level Maximum level

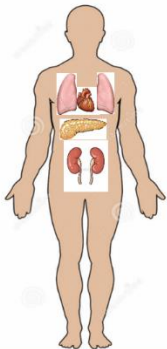
Prescribe **Cancel**

Figure 7. Example of prescription.

Lluís Russiny **Age: 81** **You are logged in as: Dr. Connecare (Clinician)**
Diagnosis: COPD

Summary Process Team Notification Forum

Patient Status	
Comorbidity status (Charlson)	6
HAD	Value
Pfeifer	8
Functional status(Barthel)	85
Anthropometric data (BMI)	30 Kg/m
GOLD	IV
CODEX	Value



Barriers	
Accessibility to the treatment	Bad Value
Dwelling	Limit
Ability of the carer	Limit
Complexity of the patient	Bad Value
Family support	Limit
Self-care questionnaire	Normal
Treatment Adherence	Normal

Devices

Figure 8. Example of summary (proposal by IRBLL).

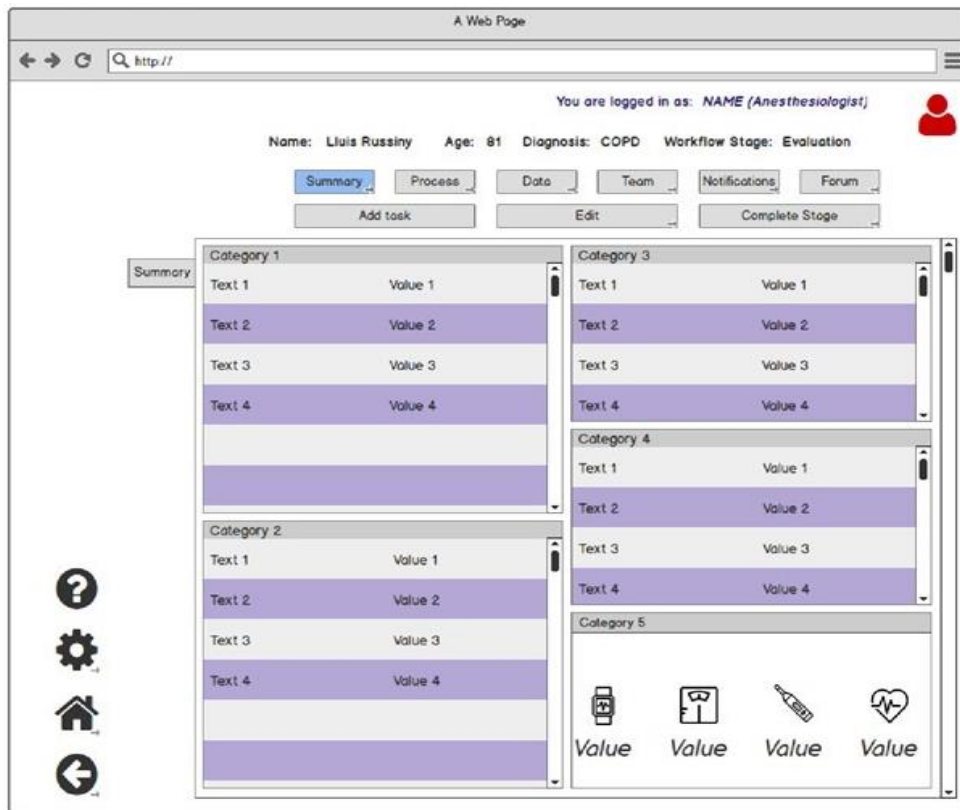


Figure 9. Proposal of mock-up for the summary.



Figure 10. Case Identification: inclusion form. In the menu on the left, the steps of the process are shown.

Relative to the SMS in all sites, clinicians pointed out the relevance of having a messaging system that enables communication between the patient and the clinicians as well as among clinicians through a forum-like approach (see **Figure 11**).

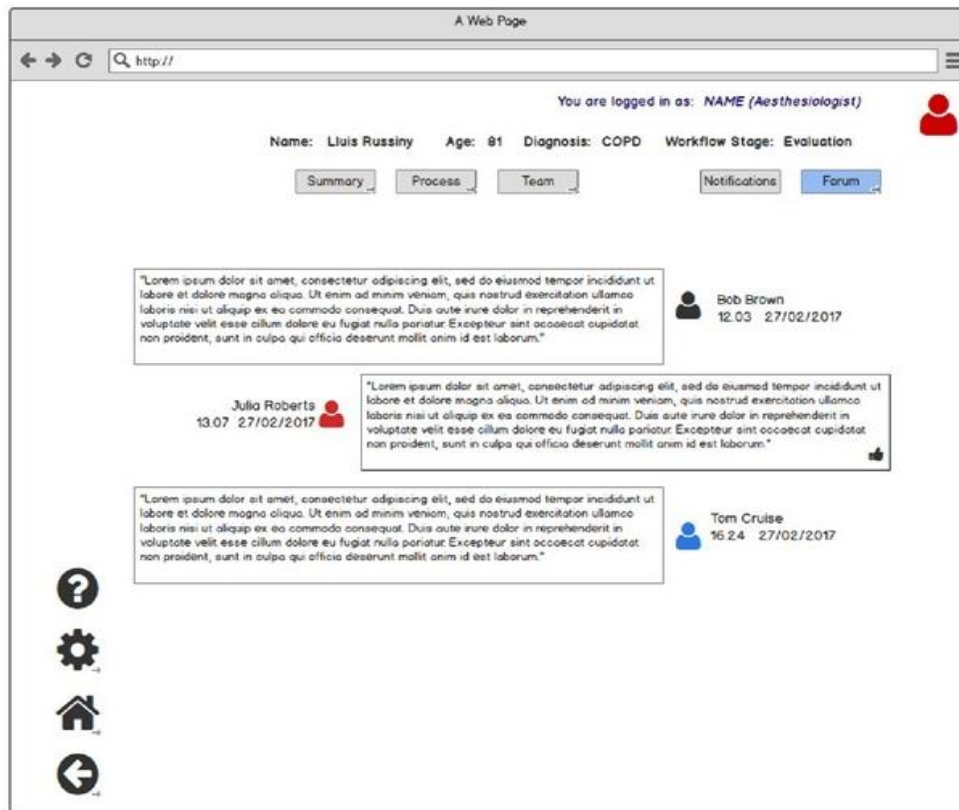


Figure 11. Example of forum for the communication of clinicians with the clinicians involved in the case and the patient.

4.2 Requirements for the SMS

4.2.1 General Requirements

- A. The SMS is meant to serve 3 primary users: the patient, the carer/family and the case manager, and, among other things, to facilitate the communication between them.
- B. The SMS needs to be very user friendly and hence very simple to use.
- C. The SMS will be an app that will be appropriate for mobile phones as well as tablets, The tablet is particularly important as an option for patients above 70.
- D. The application will consist of a “main” or “mother” app, with sub- apps.
- E. The main App will house the care plan for the patient including measureable objectives. The main app will receive data from the sub apps in order to compare them with the objectives to determine to what extent the objectives are being met. The main App will provide feedback to the patient/carers and the case manager about the extent to which care plan objectives are being met.
- F. Clinical messaging with healthcare professionals for the patient to be able to connect to the clinicians.



- G. Virtual visits (can be like Facetime, Whatsapp, etc.) to access to data and give advice by the case manager and/or other care professionals.

4.2.2 Specific Requirements per Site

4.2.2.1 Barcelona

- Management of self-administered questionnaires (with potential integration with remote monitoring devices to fill some data fields of the questionnaires).
- Management of third-party apps to support program-specific tasks, such as physical activity and nutrition.
- Management of patient agenda with respect to his/her program-specific work-plan tasks and/or appointments, including primary care appointments.
- Management of notifications: tasks/appointments close to its due date, new message from healthcare professionals (motivational or clinical).
- Access to the patient electronic prescription (integration with the regional (Catalan) Personal Health Folder (Cat@Salut La Meva Salut) might allow this).
- Give permission to a carer to have access to the patient information.
- Integration with Cat@Salut La Meva Salut as an authorized health app (appsalut.gencat.cat).

4.2.2.2 Lleida

- App for nutrition (both CS1 and CS2)
 - To give educational support
- To provide and train in the use of App for auto-checking test, COPD and HF (CS1).
- To provide and train family, carer and patient about interface use (CS1).
- App PROM: Patient Reported Outcomes (CS2)
 - To follow-up of daily evolution of the patient
 - physical activity (pedometer, GPS, pulse-oximetry)
 - rehabilitation
 - pain evolution (app de ADI may be evaluated).
- Hospitalization app for familiars (both CS1 and CS2)
 - To provide ongoing update of the patient during hospitalization.
 - To ask about extra clinic information needed during hospitalization.
 - To provide information about the Hospital discharge process to the family or carer.

4.2.2.3 Israel

Case Study 1

- The app will contain the complete discharge plan and integrated care plan in the community and will provide the patient with the details of what is expected from him and what he is meant to do. This will be provided to the carer and/or family if the patient consents.



- For each care plan objective, there will be a sub- app to assist the patient in carrying out the care plan and providing input and feedback to the case manager and/or other clinicians as well as to the main app
- There will be the following sub apps:
 - Medication adherence follow up. The patients medication regime will be fed into this app by the main app (it is part of the care plan), It will contain the medications the patient is supposed to take, the dosage, how many times a day, before meals or after meals and with set times for taking the medication. This will be the basis for the reminders that the app will give to the patient. The app will remind the patient to take medication X, it will ask him if he has taken it and the patient or his carer will be asked to click “yes” when he has taken it. In order to detect possible reactions or side effects, the app will ask the patient questions about his status in accordance with the particular drug(s)
 - Monitoring: the patient will receive sensors or devices that can transmit to the app by Bluetooth. The particular sensors and or devices will be determined by the patient’s condition but in general will probably include: Blood pressure, pulse, glucometer, scale, and body temperature. It would be great if there were also a motion detector. The patient will be reminded set times to “start” the device, the device will transmit the bio-measures to the app. The app will be pre-programmed with the patient’s “normal” range. Depending on the data transmitted, the app will ask specific questions. Based on the measures and the patient’s responses, the app will either tell the patient he is fine, instruct him to take certain actions and re-measure, or give him an alert to contact his doctor or his case manager or go to the emergency room
 - Physical activity app. The patient’s care plan relative to physical activity and exercise will be downloaded from the care plan in the main app to this app. This app will respond to pedometer that will transmit by Bluetooth to measure steps. It will give the patient reminders about the physical activity he is expected to perform and will ask for reports from the patient about what he has done and how he feels. This app or the main app will give the patient feedback about whether he is meeting his care plan goals. He should get a smiley face or clapping or some kind of positive feedback when he meets his daily goal.
 - Nutrition/diet app: the patient’s care plan relative to diet and nutrition will be downloaded into this app including his goals, how many meals, what he is supposed to eat and not supposed to eat, He will get reminders and will report. He will also get information about foods, nutritional value. If weight is an issue (under or over) the digital scale will transmit weight at predetermined intervals. Patients will be reminded to get on the scale
 - Patient reported outcomes app that would enable the patient to enter information not covered by any of his other apps through pre-structured questionnaires or free text



- App for family members (if patient consents) that will give them feedback about the patient's activities relative to his objectives. It will send alerts when the patient hasn't take his medication or the monitoring shows a significant deviation. There will also be questionnaires and possibility for family reports

Case Study 2

The requirements for the SMS system for CS2 are very similar to CS1 and virtually identical for post-discharge. The major differences will be pre discharge and during hospitalization – that is:

- The patient will receive the SMS App shortly after being scheduled for elective surgery, which will include:
 1. A pre-hospitalization app that will guide the patient and his family through the things the patient needs to do prior to hospitalization and surgery.
 - An App containing the entire pre-surgery care plan with all its objectives and measures as in Case Study 1 - the same sub apps will be relevant: medication plan adherence, physical activity plan adherence, nutrition plan adherence, monitoring based on sensors and questionnaires, and patient reported outcomes.
 - An app with specific instructions as to what to do prior to surgery, doctor, anaesthesiologist, physical therapist or nurse visits and appointments and reminders of these appointments, date of surgery and when to come to the hospital prior to surgery (with reminder for patient and accompanying family member), what to bring and not bring to the hospital, specific preparations for the days immediately prior to surgery such as reducing intake of aspirin etc. This app also needs to include a guide to the process – step by step from the time the patient enters the door of the hospital – what room to go to for preop check-up, what will it consist of, who will do it (anaesthesiologist, surgeon?), where the patient goes from there – to the operating theory to recovery until he ends up in his bed on the ward. In addition, information about what will happen to the patient in the hospital should be included
 - An app with educational material about the surgery including risks. This should be something the patient and family are required to learn before signing the informed consent form. It needs to contain all of those elements in the informed consent form in addition to the detailed information about the surgery itself, what will be happening anatomically, how long the surgery is expected to take



- An app that will give the patient and (if he consents) a family member access to his medical information while in the hospital such as medications he is being given blood pressure levels, lab test results.
 - A modification of the pre-surgery plan, adapted to in –hospital – how many steps each day, what to eat and not to eat, along with reminders
2. An app to enable communication with the appropriate clinicians (especially the care manager) both prior to surgery and during hospitalization.
3. An app for the hospital case manager (who will be the care integrator for the patient prior to surgery and in the hospital) that would enable her to monitor the patient from her smart phone and also communicate with the patient/family from her mobile phone.

4.2.2.4 Groningen

Case Study 1: AC telehealth service

- Secure system to log on
- Links to relevant websites (e.g. Lung foundation, general practitioners website etc.)
- Making appointments online (or communicate with health care provider about appointments)
- Access to medical results of the lung function assessment, along with an explanation of the results and the treatment advices
- Possibility to print and share these results with other health care professionals (by the patients)
- Medication overview
- Communication with health care professional (asking non urgent questions)
- PROMS (Asthma and COPD questionnaires, step counter). Results must be printable so that the patient can share the results with health care provider. PROMS will become part of treatment
- Information about medication and disease
- Social support (info for people around patient, advices, calendar with disease specific activities, advice about regulations for patients – e.g. Public transportation cards etc.)
- Lifestyle advices depending on the advice of the pulmonologist (diet-increase or decrease weight, smoking cessation, physical activity-step counter)
- Satisfaction with the device, easy access to technical support, options

Case Study 1: EMBRACE

- Management of self-administered questionnaires (with potential integration with remote monitoring devices to fill some data fields of the questionnaires).
- Management of third-party apps to support program-specific tasks, such as:
 - physical activity prescription
 - giving instructions on and monitoring nutrition.
 - giving instructions on and monitoring social interaction
 - training and monitoring mental functioning
- Management of third-party devices to support program-specific tasks (e.g., a wristband)



- Develop functionalities of training modules to train elderly and care professionals in using the user interface.
- Messaging with the case manager and/or other care professionals.
- Management of notifications: tasks/appointments close to its due date, new message from care professionals (motivational or clinical).
- Give permission to a carer and/or care professionals to have access to the elderly information.

Case Study 2

- Management of self-administered questionnaires (with potential integration with remote monitoring devices to fill some data fields of the questionnaires).
- Management of third-party apps to support program-specific tasks, such as:
 - physical activity prescription and monitoring body posture (upright/sitting/lying down)
 - giving instructions on and monitoring nutrition.
- Management of third-party devices to support program-specific tasks
- Making appointments online (or communicate with health care provider about appointments).
- Coupling to GP information system and hospital information system (stand-alone).
- Develop functionalities of training modules to train patients and care professionals in using the user interface.
- Messaging with the case manager and/or other care professionals.
- Virtual visits (access to data and give advice) including videoconferencing by the case manager and/or other care professionals.
- Management of notifications: tasks/appointments close to its due date, new message from care professionals (motivational or clinical).
- Give permission to a carer and/or care professionals to have access to the personal health folder.

4.2.2.5 Requirements in Terms of Devices

To monitor physical activities, activity trackers are required. Table 2 shows the features that have been required by clinical partner for each case study (CS) and the number of patients that is expected to be monitored.

Table 2. Requirements in terms of activity trackers to monitor physical activity and sleeping.

Measurement	CS1					CS2				CS3
	BCN	LL	IL	NL1	NL2	BCN	LL	IL	NL	BCN
Steps	--	50	100	40	70	5	35	70	45	5
Distance (km)	--	--	100	40	70	--	--	70	45	--
Calories	--	--	100	40	70	--	--	70	45	--
Elevation	--	--	--	--	--	--	--	--	--	--



Seconds of activity by intensity	--	--	100	40	70	--	--	70	45	--
Timeslots of awake, light sleep and deep sleep	--	--	100	40	70	--	--	70	45	--
Tablets to support self-management	--	--	100	40	--	--	--	70	--	--

To monitor health status medical devices are needed. Table 3 shows the vital signs that clinicians are interested in monitoring remotely.

Table 3. Requirements in terms of vital signs to be monitored.

Measurement	CS1					CS2				CS3
	BCN	LL	IL	NL1	NL2	BCN	LL	IL	NL	BCN
Temperature	5	--	20	--	--	--	35	14	45	--
Blood pressure	5	50	12	--	--	--	35	8	45	--
Heart rate	5	50	12	--	--	--	35	8	45	--
Weight	5	30	12	--	--	--	--	8	--	--
Blood oxygen saturation	5	50	8	--	--	--	--	6	--	--
Blood glucose level	5	--	45	--	--	--	--	31	--	--
ECG	2	--	--	--	--	--	--	--	--	--

According to Table 2 and Table 3 the following devices are needed in total:

- Activity trackers (wristbands): 420;
- Thermometers: 119
- Blood pressure monitors: 155
- Heart rate monitors: 155
- Scales: 75
- Blood oxygen saturation monitors: 69
- Glucose-meters: 81
- EEG monitors: 2
- Tablets: 210

EURECAT already tested Fitbit wristbands⁵ as well as devices from Withings/Nokia⁶ (see Table 4 and Table 5) and is in contact with iHealth⁷ to test also their devices. EURECAT is also investigating availability of devices to monitor ECG.

Table 4. Tested activity trackers and functionalities.

Features	Devices				Tablets
	Fitbit Charge HR	PulseOx	Withings Go	Acitivité Steel	ASUS ZenPad 10
<i>Hearth rate</i>	X	X	--	X	
<i>SPO2</i>	--	X	--	--	
<i>Steps</i>	X	X	X	X	
<i>Distance (Km)</i>	X	X	X	X	
<i>Calories</i>	X	X	X	X	
<i>Elevation</i>	--	X	--	X	
<i>Seconds of activity by intensity</i>	X	X	X	X	
<i>Timeslots of awake, light sleep and deep sleep</i>	X	X	X	X	
<i>Self-management support</i>					X

Table 5. Tested medical devices and their functionalities.

Features	Devices			
	Withings Thermo	Withings Blood Pressure monitor	Withings Body+	Withings Body Cardio
<i>Temperature</i>	X	--	--	--
<i>Blood pressure</i>	--	X	--	--
<i>Hearth rate</i>	--	X	--	X
<i>Weight</i>	--	--	X	X

⁵ <https://www.fitbit.com/>

⁶ <https://health.nokia.com/es/en/>

⁷ <https://ihealthlabs.eu/it/>



<i>Blood oxygen saturation</i>	--	--	--	--
<i>Blood glucose level</i>	--	--	--	--
<i>ECG</i>	--	--	--	--

4.2.3 Common Requirements

All the requirements have been listed in a table and selected according their priority, i.e., according the commonalities in the sites. **Figure 12** and **Figure 13** sketches the overall list of requirements, items in yellow are the requirements selected for the Study Release.

Summarizing, the common requirements that will be part of the Study Release available at M18 are the following:

- Basic Monitoring⁸
 - **Self-checked questionnaires** (the list of questionnaires will be personalized depending on the CS and the site). The patient is asked by the clinician (through a prescription done in the SACM) to fill one or more questionnaires. A notification is then sent to the SMS and the patient may fill the questionnaire. A message is given to the patient once the questionnaire has been answered and results sent back to the SACM. In case of anomalies, an alert is sent to the clinician. Seemly, an alert is sent if the patient did not answer to the given questionnaire by the deadline.
 - **Physical activities monitoring.** The patient will wear a wristband to monitor steps, level of activity (low, medium, high), calories, and sleeping. Through the SACM, the clinician prescribes number of steps and (optionally) level of activity that the patient is asked to do. Through the SMS the patient receives the notification and may access the monitoring section to check the performed activity. Alerts are sent to the patient and or his caregiver when the patient does not adhere to the required activity.
- Advanced Monitoring
 - **Health status monitoring.** Through medical devices (e.g., thermometer, scale, and blood-pressure monitor) the patient may take a measurement (as previously prescribed by the clinician). That measure is stored in the SMS in order to be accessible to the patient. Likewise, the information is sent to the SACM so that the clinician can access it. There will be 2 options:
 - Transmission from the device itself via Bluetooth directly to the APP

⁸ Details on the corresponding implemented services will be given in D4.2 “Basic Monitoring” that will be delivered at M18.



- Manual data entry of the measures to the App by the patient or his caregiver
- **Nutrition monitoring.** The Q-Food app provided by IPHEALTH will be used as external app to monitor food intake and the corresponding calories.
- **Pharmacological prescription and adherence monitoring.** Through the SACM the clinician prescribes drugs to the patient together with the intake frequency. In the SMS the patient may update the intake each time needed and that information is sent to the clinician. In this way, in case of low adherence an alert is sent to the clinician for better follow-up.
- Assistive Monitoring
 - **Virtual visits.** The patient and clinical staff may need to communicate through videos. Thus, the SMS will provide a video-conference service.

Moreover, as part of the physical activities service, a recommender system will be deployed to give support to and empower patients. The recommender system will also send alerts, if any, to clinicians in case some anomalies is detected⁹.

Finally, two more functionalities will be provided: messaging, to allow communication between the patients and the clinical staff¹⁰; and agenda, to send medical appointments to patients and put them in their calendar.

⁹ The first release of the recommender system will be part of the D4.2 “Basic Monitoring” that will be delivered at M18.

¹⁰ See Section 4.3.2 for more details.



Requirement	BCN CS1	Lleida CS1	Israel CS1	Groningen CS1	CS1 requ.	BCN CS2	Lleida CS2	Israel CS2	Groningen CS2	CS2 requ.	BCN CS3	CS3 requ.	Total # of requ.
Management of self-administered questionnaires (with potential integration with remote monitoring devices to fill some data fields of the questionnaires). Questionnaires should be triggered by input from devices, There should be apply a very few questions, simple and with multiple choice.	X			X	2	X		X	X	3	X	1	6
Auto-checking test COPD		X	X		2			X		1		0	3
Auto-checking test HF		X	X		2			X		1		0	3
PROMS (Asthma, COPD diabetes, questionnaires, step counter,). Results must be printable so that the patient can share the results with health care provider. PROMS will become part of treatment.				X	2			X		1		0	3
					0					0		0	
Physical activity (Eurecat) - including pedometer, GPS, pulse-oximetry	X		X	X	3	X	X	X	X	4	X	1	8
Nutrition (Vitalinq)	X	X	X	X	4	X	X	X	X	4	X	1	9
An app to give instructions and to monitor social interaction				X	1					0		0	1
An app to train and monitor mental functioning				X	1					0		0	1
App for rehabilitation					0		X	X		2		0	2
App for pain evolution (ADI)					0		X	X		2		0	2
Management of patient agenda with respect to his/her program-specific work-plan tasks and/or appointments (including integration with primary care appointments). The patient care plan both preop for Case 2 and post-discharge for both cases needs to include objectives that the patient needs to report on or that are detectable by other apps	X		X	X	3	X		X	X	3	X	1	7
Clinical messaging with healthcare professionals. Communication with health care professional (asking non urgent questions)	X		X	X	3	X		X	X	3	X	1	7
Management of notifications: tasks/appointments close to its due date, new message from healthcare professionals (motivational or clinical)	X		X	X	3	X		X		2	X	1	6
Access to the patient electronic prescription (integration with LMS might allow this). Note: Maccabi patients already have this app on their phone. Also medication adherence follow up should come after this so that all medication related expectations are together	X	X?			1	X		X?		1	X	1	3
Medication overview			X	X	2			X		1		0	3
Information about medication and disease				X	1					0		0	1
Give permission to a carer to have access to the patient information.	X		X	X	3	X		X	X	3	X	1	7
Integration with PHF (e.g., LSM in Catalonia) as an authorized health app	X				1	X				1	X	1	3

Figure 12 - Summary of SMS requirements, part I.



Requirement	BCN CS1	Lleida CS1	Israel CS1	Groningen CS1	CS1 requ.	BCN CS2	Lleida CS2	Israel CS2	Groningen CS2	CS2 requ.	BCN CS3	CS3 requ.	Total # of requ.
			X		1					0		0	1
Hospitalization app for familiars. Note: in Assuta integrate?		X	X		2		X	X		2		0	4
		X			1		X			1		0	2
		X	X		2		X	X		2		0	4
Devices: weight, oxygen saturation, BP, heart rate, fitbit, body temperature, pulse-oximetry. Note: with follow up questionnaires , some standard some triggered by an algorithm relative to the input from the devices		X	X		2		X	X	X	3		0	5
To provide and train family, carer and patient about interface use. Develop functionalities of training modules to train elderly and care professionals in using the user interface.		X	X	X	3			X		1		0	4
Virtual visits (GP, nurse and case manager). Virtual visits (access to data and give advice) by the case manager and/or other care professionals		X	X	X	3		X	X	X	3		0	6
Secure system to log on	X	X	X	X	4	X	X	X	X	4	X	1	9
Links to relevant websites (e.g. Lung foundation, general practitioners website etc.)			X	X	2			X		1		0	3
Access to medical results of the lung function assessment, along with an explanation of the results and the treatment advices				X	1					0		0	1
Social support (info for people around patient, advices, calendar with disease specific activities, advice about regulations for patients – e.g. Public transportation cards etc.)				X	1					0		0	1
Lifestyle advices depending on the advice of the pulmonologist (diet-increase or decrease weight, smoking cessation, physical activity-step counter)				X	1					0		0	1
Satisfaction with the device, easy access to technical support, options				X	1					0		0	1
Medication adherence follow up			X		1					0		0	1
Patient reported outcomes app that would enable the patient to enter information not covered by any of his other apps			X		1					0		0	1
App for the case manager			X		1			X		1		0	2
Educational material about the surgery including risks					0			X		1		0	1
Guide for patients and families when come to the hospital for a procedure about what is expected, the process, where to go (floor, room name or number)					0			X		1		0	1
App for families/cares to give them feedback on patients adherence to care plan, with alerts so that they can intervene			X		1			X		1		0	2

Figure 13. Summary of SMS requirements, part II.



4.2.4 Requirements of Graphical User Interfaces for Professionals

Based on Balsamiq mock-up¹¹, wireframes for the Self-Management System (SMS) have been proposed to clinicians and updated iteratively according to the CONNECARE co-design approach. The mock-ups have been implemented as clickable design and accessible online (<http://connecaredemo.vitalinq.nl/#/app/home>).

Mock-ups have been shown to clinicians during the working team meetings and feedback used to improve them. Feedback ranged from the information to put in the first view – e.g., in Groningen they prefer to have the list of tasks to be performed (see **Figure 14**) whereas in Lleida they prefer the list of alerts (see **Figure 15**); to the relevance to have a self-check questionnaires easily accessible (an example is given in **Figure 16**); to how display results of activities or any measurements (see **Figure 17**). In all sites, clinicians pointed out the relevance to have a messaging system that allow to establish a communication between the patient and the clinicians (see **Figure 18**).

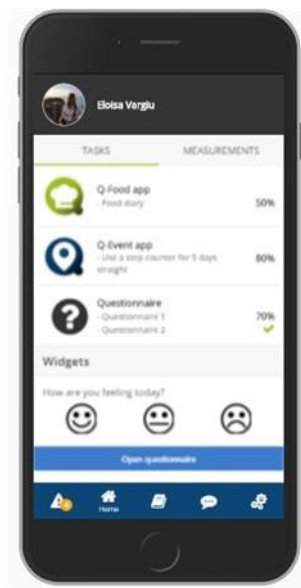


Figure 14. First screen of the SMS with the list of tasks (requirements by working team in Groningen).

¹¹ <https://balsamiq.com/products/mockups/>

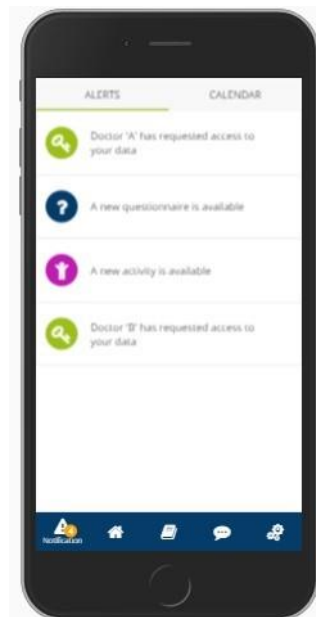


Figure 15. First screen of the SMS with the alerts first (requirements by working team in Lleida).



Figure 16. Example of questionnaire (SF-12).



Figure 17. Example of measurement (trend on number of steps).



Figure 18. Example of chat between a clinician and a patient.

4.3 Requirement of the Integrated CONNECARE System

As described in D5.1 “Collaborative Digital Health Framework”, SACM and SMS are the main components of the overall CONNECARE system. Those systems allow interacting with professional staff and patient, respectively, and are interconnected through the CONNECARE ESB. In the following, we



briefly illustrate requirements on user management and on communication, as part of the requirements of the overall CONNECARE system¹².

4.3.1 User Management

The CONNECARE User Management System (UIMS) must provide a convenient, centralized way to authenticate and store user data following the single sign on (SSO) principle. The creation and management of the user data will be done at the UIMS, which is a separate but connected component to the SACM system and the SMS. Whenever a new user is created on the UIMS, it will propagate the new user's data to the SACM and other involved systems. In the following, the required process for the creation of a user, the authentication and the authorization of a case is described.

Creation of a user - The creation process of clinical staff involved in the cases will be triggered on the Professional UI. Once a clinician wants to create a new user, s/he must provide all necessary information for that user, i.e. the name, email, group and expertise. The Professional UI will then send the stated information to the UIMS. The UIMS will then persist the user and propagate the data of the newly created user to all connected sub systems. The same process will happen whenever there is an update on a certain (existing) user.

In order to guarantee the privacy of the user data connection, a temporal random password is generated automatically once the user is created. The UIMS sends an email to the new user to inform it about the user and the steps to follow to change it.

This behaviour will be active during the Study Release until the integration with the hospital information system will be available. Once the system will be connected to the HIS, the workflow will change. In case of professional users, the system will allow to grant access to pre-existing HIS users. In case of patient users, once a professional will start a process will link it to an existing HIS patient. This action grant access to this user to access to the CONNECARE system using the SMS without the need to create a new user into the system.

Login & Authentication - A clinician will log into the system by using the Professional UI providing his/her credentials. The professional UI will then call the UIMS, which issues an authorisation token. The token is just a hash of a piece of structured text which contains all necessary user information such as email, group belongings, the id etc. After the clinician is successfully authenticated by the UIMS, the Professional UI will be able to make requests to the SACM directly using the previously issued token.

¹² Technical details of the overall CONNECARE system will be part of the D5.2 "D5.2_Study Release of the generic CONNECARE system".



Authorization - Authorization is important to make sure that only users with the right permissions can access a patient's case data. Furthermore, the system should allow to distinguish between "write", i.e. who is allowed to change data, and "read", i.e. who is allowed to see data, rights. The permission for a case must be set per user, as well as per group.

4.3.2 Communication

Depending on the complexity of a patient's case, it is possible that several clinicians may be involved in the recovery process of the patient. In many cases, mandatory tasks for the patient depend on each other. Therefore, it is required that clinicians be able to exchange information quickly and directly. Additionally, the patient must also be able to communicate with the clinicians and vice versa using the SMS.

The CONNECARE system will fulfil this requirement by offering a multichannel (clinician to clinician or patient to clinician), bidirectional communications system. Bidirectional means that clinicians can read and write messages but also the patient is able to read and write messages. For each patient's case, the system should provide an internal channel which is hidden from the patient and only users with proper access rights can enter. This channel will be used for the communication between the involved clinicians. All exchanged messages that leave the internal and firewalled network of the SACM will only be delivered through secure, encrypted channels. The messages will be exchanged in a forum style way in near real-time. However, it is not intended to provide a full real-time chat.

Sometimes, it may be necessary for the clinicians to exchange documents that are not yet in the system but are important to handle and process a patient's case. Therefore, the SACM should provide the ability to attach documents and files to messages.

Besides the channel for internal message exchange between the clinicians, the SACM should also provide a channel for communication with the patient. Since the patient has no direct access to the SACM, he or she will not be able to send messages directly to the SACM. However, via the SMS, a patient can send and receive messages from clinicians. All messages that will be exchanged via the patient and the clinicians will be sent only through encrypted channels. Both sides will get a notification when a new message is received.

The two- channels, i.e. the internal one for the clinicians and the external one for the communication with the patient, will be strictly separated. A patient must not be able to read the messages sent in the internal channel among clinicians in any case.



5. Conclusions

The current document provides an in-depth look into the 1st PDSA cycle, making available details on case study definitions; workflows and processes; feedback on SMS and SACM wireframes provided to technical partners; evaluation; and, functional and non-functional requirements. The deliverable offers a close view of the CONNECARE's co-design process, and together with "D2.2 – Adaptive Case Management Design" and "D2.3 – Patient-based Health Risk Assessment and Stratification" shows an accurate summary of the project's progress up to July 2017. The engagement of both clinical and technical partners has been outstanding, as demonstrated by the huge number of iterations generating enhanced versions of the SMS and SACM mock-ups. However, what is most important is that this co-design process is allowing to develop processes and tools reflecting the real needs of patients and professionals, capable of adapting to site-specific characteristics, and thus with a high potential for scalability.



6. Annexes

6.1 PDSA cycle working team reports

6.1.1 Barcelona (Spain)



CONNECARE

User Document

Working Team Meeting Report

Case Study: 1

Site: Hospital Clínic of Barcelona

Cycle: 1st

Date: 11/14/2016

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 04-01-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
• • CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 11-18-2016



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 1 - HCB – 1 st cycle – 11/14/2016

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Josep Roca / Isaac Cano	Email	jroca2clinic.ub.es
Partner	HCB / HCB	Phone	+34 93 227 5747

Abstract	This document reports on the meeting held in Barcelona (Hospital Clínic of Barcelona - HCB) on November 14 th of 2016, regarding CONNECARE case study 1, with the working team with clinicians of HCB.
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1. Executive Summary

1.1 Objectives

The first objective of the meeting was to revise with all participants what are the focus and aims of CONNECARE case study 1 programs for a) *Community-based management of Complex Chronic Patients (CCP) – Home Hospitalization and Early Discharge service (HH/ED)*, and b) *Integrated care for patients under Long Term Oxygen Therapy (LTOT)*.

Once Case Study 1 programs are deeply discussed, the working team aim at identifying specific aspects that should be given priority in order to be ready to initiate CONNECARE technical developments and ultimately to effectively start CONNECARE clinical trials at M18.

1.2 Results

The main result of the meeting was the awareness by all participants about the specific programs of CONNECARE case study 1 (i.e., HH/ED and LTOT), as well as the identification of areas for improvement of current processes, as listed in Section 2.2 (collected data). Moreover, the working team concluded to explore how to align CONENCRE developments with current tools generated by the Catalan Ministry of Health to support coordinated care (Section 2.3). Ultimately, concrete actions were agreed as next steps (Section 3).



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Dra. Carmen Hernández	Head of the Integrated Care unit	Hospital Clínic of Barcelona
Dr. Josep Roca	Chief of the Lung Function Unit	Hospital Clínic of Barcelona
Erik Baltaxe	Medical doctor, consultant Pulmonologist	Hospital Clínic of Barcelona & Sheba Medical Center (Israel)
Dr. Isaac Cano	Digital Health project manager	Hospital Clínic of Barcelona

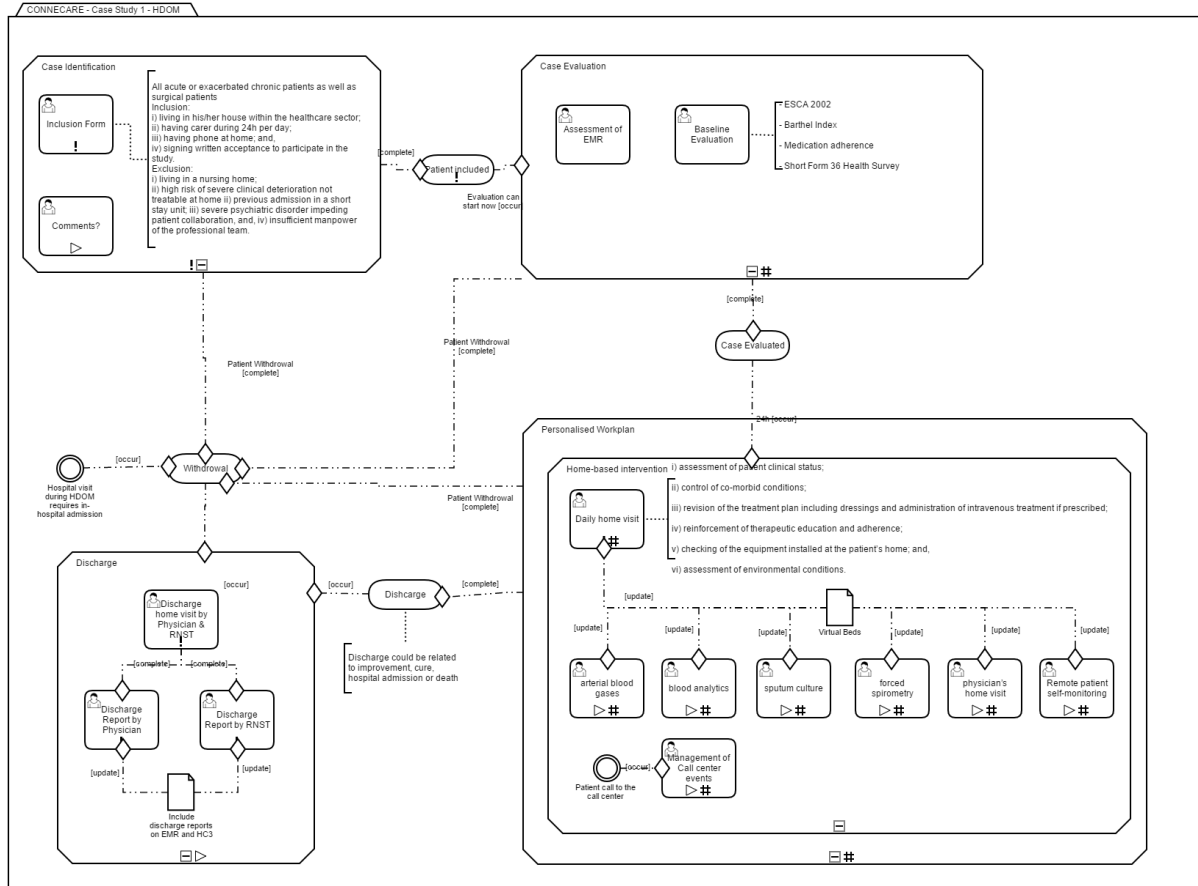
2.2 Collected Data

The workflow for Case Study 1 is presented as described in detail in deliverable D7.1: Evaluation Plan for the Entire Project (*Sections 6.2.1. Use Case 1a: Community-based management of Complex Chronic Patients (CCP) and 6.2.2. Use Case 1b: Integrated care for patients under Long Term Oxygen Therapy (LTOT)*), and illustrating them with corresponding Case Management Model and Notation (CMMN) diagrams, as shown below, to collect the following end-user feedback from the participants.

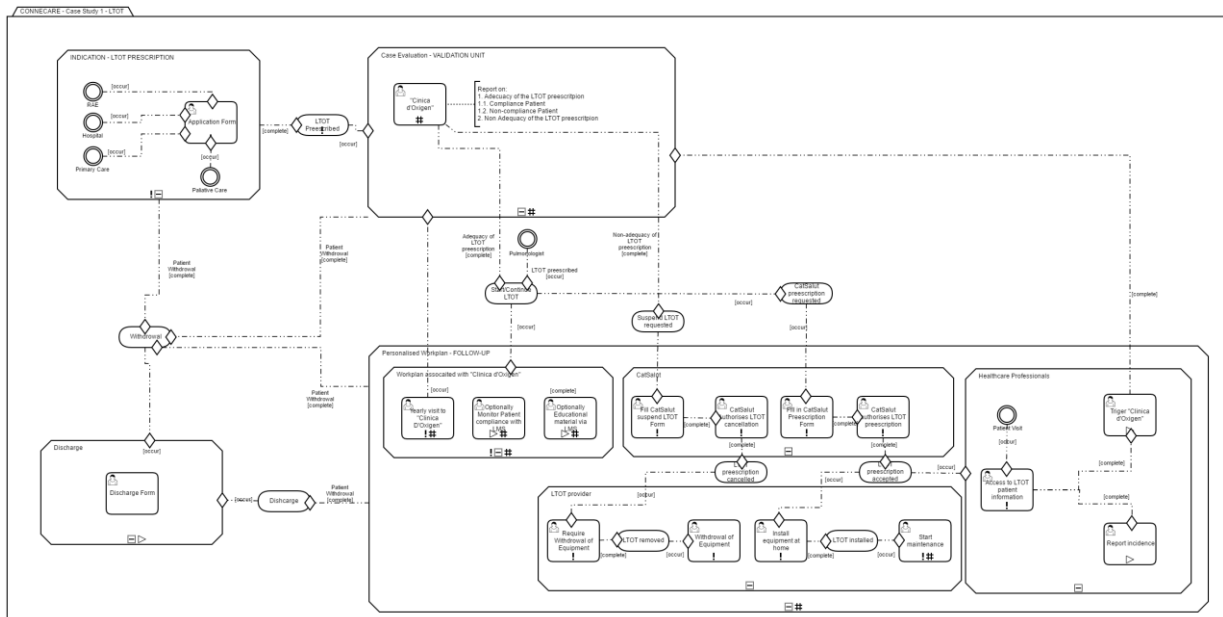
- Focus on following areas for improvement of current processes of the Home Hospitalization/Early Discharge (HH(ED) service of the CCP program:
 - Patient eligibility.
 - Service request.
 - Patient inclusion.
 - Patient evaluation (special emphasis on patient health risk assessment and stratification)
 - Patient work plan (special emphasis on pharmacy).
 - Alignment with Innovation of Clinical Processes initiatives of HCB.
 - Integration with patient support center activities.
 - Alignment with future transitional care programs.
- Focus on following areas for improvement of current processes of the Long Term Oxygen therapy program:
 - Coordination of main actors (patient/carer, specialized care, primary care, Catalan Health care system – CatSalut and LTOT provider) towards enhancement of patient adherence. Service logistics include:
 - Sharing of LTOT prescription.
 - Tracking events.
 - Collaborative work among actors



CMMN of use Case 1a: Community-based management of Complex Chronic Patients (CCP) – Home Hospitalization and Early Discharge service (HH/ED)



CMMNS of Use Case 1b: Integrated care for patients under Long Term Oxygen Therapy (LTOT)





2.3 Organizational Aspects

Participants agree on aligning CONNECARE coordinated care needs with current digital health tools of the Catalan Ministry of Health. To this end, the working team will conduct a first tentative meeting with the iSalut office of the Catalan Ministry of Health. The aim of this meeting will be to know which are the current priorities and tools to support coordinated and integrated care at regional level.



3. Next Steps

A new meeting will be scheduled for January.

Before, the following actions are required:

- Submit for publication a manuscript reporting a ten years pragmatic assessment of the implementation of Home Hospitalization and Early Discharge as an Integrated Care Service of the Hospital Clínic of Barcelona.
- Check the viability and design the protocol for the program-specific health risk assessment and stratification strategies.
- Elaborate program-specific and general assessment strategies.
- Update current program workflows taking into account the outcome of this working team meeting.



CONNECARE

User Document

Working Team Meeting Report

Case Study: 2 and 3

Site: Hospital Clínic of Barcelona

Cycle: 1st

Date: 11/18/2016

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 04-01-2016

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Work Package	Number	2	Title	Case study 2 and 3 - HCB – 1 st cycle – 11/18/2016

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Josep Roca / Isaac Cano	Email	jroca@clinic.ub.es
Partner	HCB / HCB	Phone	+34 93 227 5747

Abstract	This document reports on the meeting held in Barcelona (Hospital Clínic of Barcelona - HCB) on November 18 th of 2016, regarding CONNECARE case study 2 and 3, with the working team with clinicians of HCB.
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1. Executive Summary

1.1 Objectives

The first objective of the meeting was to revise with all participants what are the focus and aims of CONNECARE case study 2 and 3 programs for a) *Preventive patient-centered intervention in complex chronic patients undergoing elective major surgical procedures (PERISURGYCAL)*, and b) *Pre-habilitation in high risk candidates for major surgery (PREHAB)*. PREHAB is considered a subprogram of the *PERISURGYCAL* program.

Once Case Study 2 and 3 programs are deeply discussed, the working team aim at identifying specific aspects that should be given priority in order to be ready to initiate CONNECARE technical developments and ultimately to effectively start CONNECARE clinical trials at M18.

1.2 Results

The main result of the meeting was the awareness by all participants about the specific programs of CONNECARE case study 2 and 3 (i.e., PERISURGYCAL and PREHAB), as well as agreement on details for data collection (ANNEX A), to allow technical partners to progress with technical developments using the joint version of case study 2 and 3 as reference documents. Moreover, the working team concluded to explore how to align CONENCRE developments with current tools generated by the Catalan Ministry of Health to support coordinated care (Section 2.3). Ultimately, concrete actions were agreed as next steps (Section 3).



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Dra. Graciela Martínez	Anesthesiologist	Hospital Clínic of Barcelona
Dr. Josep Roca	Chief of the Lung Function Unit	Hospital Clínic of Barcelona
Dra. Elena Gimeno	Physiotherapist	Hospital Clínic of Barcelona
Anael Barberan	Physiotherapist	Hospital Clínic of Barcelona
Dr. Isaac Cano	Digital Health project manager	Hospital Clínic of Barcelona

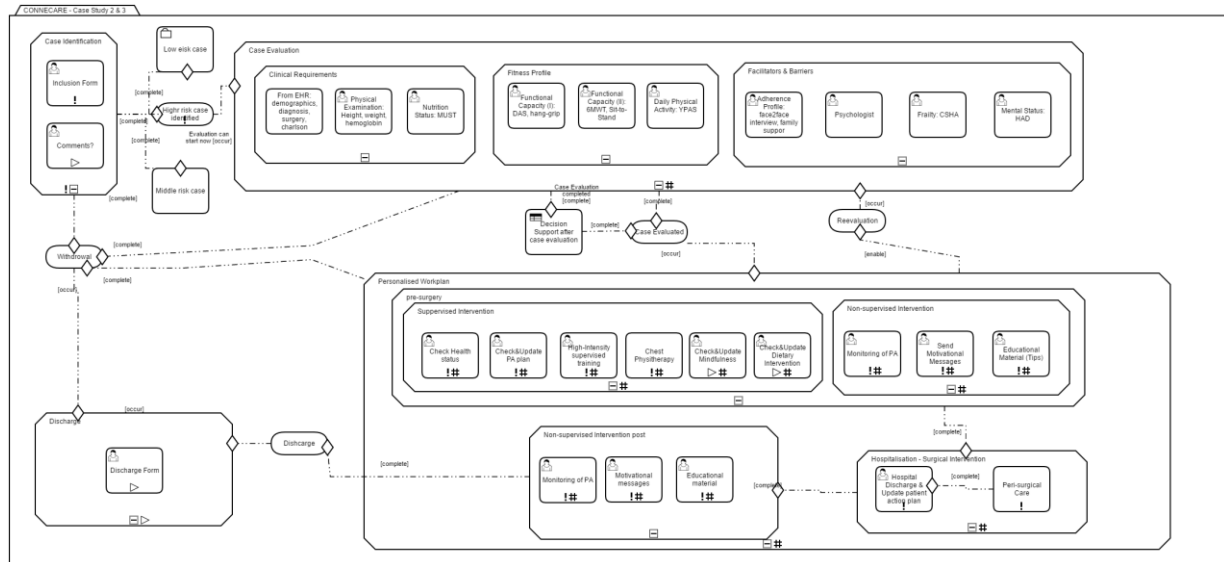
2.2 Collected Data

The workflows for Case Study 2 and 3 are presented as described in detail in deliverable D7.1: Evaluation Plan for the Entire Project (*Sections 6.2.3. Use Case 2: Preventive patient-centered intervention in complex chronic patients undergoing elective major surgical procedures and 6.2.4. Use case 3: Pre-habilitation in high risk candidates for major surgery*, and illustrating them jointly with the Case Management Model and Notation (CMMN) diagram shown below, to collect the following end-user feedback from the participants.

- Participants agree on generating a story board for the joint version of case study 2 and 3 in order to facilitate understanding with non-clinical partners.
- Participants agree on details for data collection as described in detail in ANNEX A. This will allow technical partners to use the joint version of case studies 2 and 3 as reference case study for development of technical use case definitions and Smart Adaptive Case Management (SACM) requirements.
- Participants agree on the need for a Physical Activity prescription and monitoring mobile application, as part of the CONNECARE Self-management System (SMS).



CMMN of Case Study 2 and 3: Preventive patient-centered intervention in complex chronic patients undergoing elective major surgical procedures (PERISURGYCAL), and Pre-habilitation in high risk candidates for major surgery (PREHAB).



2.3 Organizational Aspects

In association with case study 1, participants agree on aligning CONNECARE coordinated care needs with current digital health tools of the Catalan Ministry of Health. To this end, the working team will conduct a first tentative meeting with the iSalut office of the Catalan Ministry of Health. The aim of this meeting will be to know which are the current priorities and tools to support coordinated and integrated care at regional level.



3. Next Steps

A new meeting will be scheduled for January.

Before, the following actions are required:

- Submit for publication a manuscript reporting the results of a recent PREHAB pilot experience at Hospital Clínic of Barcelona, entitled: Personalized prehabilitation versus standard care in high-risk patients undergoing elective major abdominal surgery: a randomized double-blind controlled trial.
- Check the viability and design the protocol for the program-specific health risk assessment and stratification strategies.
- Elaborate program-specific and general assessment strategies.
- Update current program workflows taking into account the outcome of this working team meeting.



4. ANNEX A: Details of data collection

Case identification

Variable Name	Form Name	Section Header	Field Type	Field Label	Choices / calculations
morethan70	Case identification	Identification of candidates	radio	> 70 años	0, NO 1, SI
cir_prev	Case identification		dropdown	Cirugía prevista	0, cap 1, abdominal 2, Gynecology 3, cardiovascular 4, Urology 5, Thorax
asa	Case identification		dropdown	ASA	0, 1 1, 2 2, 3 3, 4
priority	Case identification		radio	Prioridad de la cirugía	0, < 4 semanas 1, 4-8 semanas 2, > 8 semanas
mintimegap	Case identification		radio	Se dispone de mínimo 3-4 semanas?	0, Si 1, No
otherexcl	Case identification		text	Otras causas de la exclusión	

Case evaluation

Variable Name	Form Name	Section Header	Field Type	Field Label	Choices / calculations
street	Case evaluation - Demographics	Socio-demographics	text	Domicilio	
telf	Case evaluation - Demographics		text	Teléfono	
age	Case evaluation - Demographics		text	Edad	
education	Case evaluation - Demographics		dropdown	Educación	0, no disponible 1, Estudios primarios 2, Estudios secundarios 3, Estudios universitarios
diagnosisinfo	Case evaluation - Diagnosis		text	Información respecto al diagnóstico	
surgeryinfo	Case evaluation - Surgery		text	Información respecto a la cirugía	
ch1	Case evaluation - Comorbidity	Charlson Comorbidity Index	radio	Myocardial infarct	0, No 1, Yes
ch2	Case evaluation - Comorbidity		radio	Congestive heart failure	0, No 1, Yes
ch3	Case evaluation - Comorbidity		radio	Peripheral vascular disease	0, No 1, Yes

ch4	Case evaluation - Comorbidity		radio	Cerebrovascular disease (except hemiplegia)	0, No 1, Yes
ch5	Case evaluation - Comorbidity		radio	Dementia	0, No 1, Yes
ch6	Case evaluation - Comorbidity		radio	Chronic pulmonary disease	0, No 1, Yes
ch7	Case evaluation - Comorbidity		radio	Connective tissue disease	0, No 1, Yes
ch8	Case evaluation - Comorbidity		radio	Ulcer disease	0, No 1, Yes
ch9	Case evaluation - Comorbidity		radio	Mild liver disease	0, No 1, Yes
ch10	Case evaluation - Comorbidity		radio	Diabetes (without complications)	0, No 1, Yes
ch11	Case evaluation - Comorbidity		radio	Diabetes with end organ damage	0, No 1, Yes
ch12	Case evaluation - Comorbidity		radio	Hemiplegia	0, No 1, Yes
ch13	Case evaluation - Comorbidity		radio	Moderate or severe renal disease	0, No 1, Yes
ch14	Case evaluation - Comorbidity		radio	Solid tumor (non metastatic)	0, No 1, Yes
ch15	Case evaluation - Comorbidity		radio	Leukemia	0, No 1, Yes
ch16	Case evaluation - Comorbidity		radio	Lymphoma, Multiple myeloma	0, No 1, Yes
ch17	Case evaluation - Comorbidity		radio	Moderate or severe liver disease	0, No 1, Yes
ch18	Case evaluation - Comorbidity		radio	Metastatic solid tumor	0, No 1, Yes
ch19	Case evaluation - Comorbidity		radio	AIDS	0, No 1, Yes
ch20	Case evaluation - Comorbidity		radio	Age 50-59	0, No 1, Yes
ch21	Case evaluation - Comorbidity		radio	Age 60-69	0, No 1, Yes
ch22	Case evaluation - Comorbidity		radio	Age 70-79	0, No 1, Yes
ch23	Case evaluation - Comorbidity		radio	Age 80-89	0, No 1, Yes
ch24	Case evaluation - Comorbidity		radio	Age 90-99	0, No 1, Yes
ch25	Case evaluation - Comorbidity		calc	Charlson Comorbidity Index	sum([ch1]*1, [ch2]*1, [ch3]*1, [ch4]*1, [ch5]*1, [ch6]*1, [ch7]*1, [ch8]*1, [ch9]*1, [ch10]*1, [ch11]*2, [ch12]*2, [ch13]*2, [ch14]*2, [ch15]*2, [ch16]*2, [ch17]*3, [ch18]*6, [ch19]*6, [ch20]*1, [ch21]*2, [ch22]*3, [ch23]*4, [ch24]*5)
weight	Case evaluation – Physical Examination	Physical Examination	text	Peso	
height	Case evaluation – Physical Examination		text	Altura	
hemo	Case evaluation – Physical Examination		text	Hemoglobina	



bmi	Case evaluation – Nutritional Status	Malnutrition Universal Screening Tool (MUST)	radio	BMI	0, >20 1, 18,5-20 2, <18,5
perdi	Case evaluation – Nutritional Status		radio	Perdida de peso en los ultimos 3-6 meses	0, <5% 1, 5-10% 2, >10%
enf	Case evaluation – Nutritional Status		radio	Enfermedad aguda reciente y ha estado o tiene prevision de no ingesta >5 dias	0, NO 1, SI
tscm	Case evaluation – Nutritional Status		calc	Total score	sum([bmi],[per],[enf]*2)
cscha	Case evaluation - Frailty	Clinical Frailty Scale	radio	CSHA	0, Activo, motivado, ejercitado 1, Bien, activos ocasionales 2, Problemas medicos bien controlados, no AF regular 3, Vulnerable, sintomas limitan actividades 4, Fragilidad leve 5, Fragilidad moderada, requiere ayuda para actividades fuera 6, Fragilidad severa, completamente dependiente 7, Fragilidad muy severa total dependencia, terminales 8, Enfermo terminal con expectativa de vida <6meses aunque no necesariamente dependiente
had1	Case evaluation – Mental Status	Hospital Anxiety and Depression (HAD)	dropdown	1. Me siento tenso o nervioso	0, Nunca 1, A veces 2, Muchas veces 3, Todos los dias
had2	Case evaluation – Mental Status		dropdown	2. Todavia disfruto con lo que antes me gustaba	0, Como siempre 1, No lo bastante 2, Solo un poco 3, Nada
had3	Case evaluation – Mental Status		dropdown	3. Tengo una sensacion de miedo, como si algo horrible me fuera a suceder.	0, Nada 1, Un poco, pero no me preocupa 2, Si, pero no es muy fuerte 3, Definitivamente y es muy fuerte
had4	Case evaluation – Mental Status		dropdown	4. Puedo reirme y ver el lado divertido de las cosas.	0, Al igual que siempre lo hice 1, No tanto ahora 2, Casi nunca 3, Nunca
had5	Case evaluation – Mental Status		dropdown	5. Tengo mi mente llena de preocupaciones.	0, Solo en ocasiones 1, A veces, aunque no muy a menudo 2, Con bastante frecuencia 3, La mayoría de las veces
had6	Case evaluation – Mental Status		dropdown	6. Me siento alegre.	0, Casi siempre 1, A veces 2, No muy a menudo 3, Nunca
had7	Case evaluation – Mental Status		dropdown	7. Puedo estar sentado confortablemente y sentirme relajado.	0, Siempre 1, Por lo general 2, No muy a menudo 3, Nunca
had8	Case evaluation – Mental Status		dropdown	8. Me siento como si cada dia estuviera mas lento.	0, Nunca 1, A veces 2, Muy a menudo 3, Por lo general, en todo momento
had9	Case evaluation – Mental Status		dropdown	9. Tengo una sensacion extrana, como si tuviera mariposas en el estomago.	0, El Nunca 1, En ciertas ocasiones 2, Con bastante frecuencia 3, Muy a menudo
had10	Case evaluation – Mental Status		dropdown	10. He perdido interes en mi aspecto personal.	0, Me preocupo al igual que siempre 1, Podria tener un poco mas de cuidado 2, No me preocupeo tanto como debiera 3, Totalmente
had11	Case evaluation – Mental Status		dropdown	11. Me siento inquieto, como si no pudiera parar demoverme.	0, Nada 1, No mucho 2, Bastante 3, Mucho

had12	Case evaluation – Mental Status		dropdown	12. Me siento optimista respecto al futuro.	0, Igual que siempre 1, Menos de lo que acostumbraba 2, Mucho menos de lo que acostumbraba 3, Nada
had13	Case evaluation – Mental Status		dropdown	13. Me asaltan sentimientos repentinos de panico.	0, Rara vez 1, No muy a menudo 2, Bastante a menudo 3, Muy frecuentemente
had14	Case evaluation – Mental Status		dropdown	14. Me divierto con un buen libro, la radio, o un programa de television.	0, menudo 1, A veces 2, No muy a menudo 3, Rara vez
had15	Case evaluation – Mental Status		calc	HAD_Anxiety	sum([had1], [had3], [had5], [had7], [had9], [had11], [had13])
had16	Case evaluation – Mental Status		calc	HAD_Depression	sum([had2], [had4], [had6], [had8], [had10], [had12], [had14])
had17	Case evaluation – Mental Status		calc	HAD_TotalScore	sum([had15], [had16])
vale	Case evaluation – Functional Capacity (I)	Duke Activity Status Index (DASI)	radio	¿Valerse por si solo, vestirse, asearse?	0, NO 1, SI
cam	Case evaluation – Functional Capacity (I)		radio	¿Caminar por su casa?	0, NO 1, SI
camu	Case evaluation – Functional Capacity (I)		radio	¿Caminar unos 2km sobre llano (sin pendiente)?	0, NO 1, SI
sub	Case evaluation – Functional Capacity (I)		radio	¿Subir un tramo de escalera o caminar sobre una pendiente moderada?	0, NO 1, SI
corre	Case evaluation – Functional Capacity (I)		radio	¿Correr una distancia corta?	0, NO 1, SI
real	Case evaluation – Functional Capacity (I)		radio	¿Realizar trabajos de casa suaves como sacar el polvo, lavar platos?	0, NO 1, SI
pasa	Case evaluation – Functional Capacity (I)		radio	¿Pasar el aspirador, barrer, llevar compra ligera?	0, NO 1, SI
arreg	Case evaluation – Functional Capacity (I)		radio	Arreglar el jardin, mover muebles pesados	0, NO 1, SI
bici	Case evaluation – Functional Capacity (I)		radio	Bicicleta sobre llano, caminar con marcha ligera, empujar	0, NO 1, SI
tene	Case evaluation – Functional Capacity (I)		radio	Tener relaciones sexuales	0, NO 1, SI
bail	Case evaluation – Functional Capacity (I)		radio	Bailar, golf, tenis dobles, nadar	0, NO 1, SI
ejerin	Case evaluation – Functional Capacity (I)		radio	¿Ejercicio intenso como esquiar, squash, padel, tenis simple, bicicleta de montana ?	0, NO 1, SI
scrt	Case evaluation – Functional Capacity (I)		calc	Score total	sum([vale]*2.75, [cam]*1.75, [camu]*2.75, [sub]*5.5, [corre]*8, [real]*2.7, [pasa]*3.5, [arreg]*8, [bici]*4.5, [tene]*5.25, [bail]*6, [ejerin]*7.5)



hagr2	Case evaluation – Functional Capacity (I)	Hand grip	radio	Mano Dominante	0, Derecha 1, Izquierda
hagr3	Case evaluation – Functional Capacity (I)		text	Medicion 1	
hagr4	Case evaluation – Functional Capacity (I)		text	Medicion 2	
hagr5	Case evaluation – Functional Capacity (I)		text	Medicion 3	
hagr6	Case evaluation – Functional Capacity (I)		radio	Mano No Dominante	0, Derecha 1, Izquierda
hagr7	Case evaluation – Functional Capacity (I)		text	Medicion 1	
hagr8	Case evaluation – Functional Capacity (I)		text	Medicion 2	
hagr9	Case evaluation – Functional Capacity (I)		text	Medicion 3	
distance	Case evaluation - Functional Capacity (II)	Six minute walking test	text	Distancia	
baselina_hr	Case evaluation - Functional Capacity (II)		text	Frecuencia cardiaca inicial	
final_hr	Case evaluation - Functional Capacity (II)		text	Frecuencia cardiaca final	
baseline_sato	Case evaluation - Functional Capacity (II)		text	Saturacion de oxigeno inicial	
final_sato	Case evaluation - Functional Capacity (II)		text	Saturacion de oxigeno final	
baseline_dyspnea	Case evaluation - Functional Capacity (II)		text	Disnea inicial	
final_dyspnea	Case evaluation - Functional Capacity (II)		text	Disnea final	
baseline_fati	Case evaluation - Functional Capacity (II)		text	Fatiga inicial	
final_fati	Case evaluation - Functional Capacity (II)		text	Fatiga final	
hrr1	Case evaluation - Functional Capacity (II)		text	HRR1	
stops	Case evaluation - Functional Capacity (II)		dropdown	¿Ha necesitado el paciente pararse?	0, No 1, Si



num_stops	Case evaluation - Functional Capacity (II)		text	Numero de paradas	
tim_par	Case evaluation - Functional Capacity (II)		text	Tiempo de las paradas	
cap1	Case evaluation - Functional Capacity (II)	Sit-to-stand (30 seg)	text	Basal FC	
cap2	Case evaluation - Functional Capacity (II)		text	Basal SpO2	
cap3	Case evaluation - Functional Capacity (II)		text	Basal Borg Disnea	
cap4	Case evaluation - Functional Capacity (II)		text	Basal Borg EEII	
cap5	Case evaluation - Functional Capacity (II)		text	Final FC	
cap6	Case evaluation - Functional Capacity (II)		text	Final SpO2	
cap7	Case evaluation - Functional Capacity (II)		text	Final Borg Disnea	
cap8	Case evaluation - Functional Capacity (II)		text	Final Borg EEII	
chte	Case evaluation - Functional Capacity (II)		text	Numero de repeticiones	
stops2	Case evaluation - Functional Capacity (II)		dropdown	¿Ha necesitado el paciente pararse?	0, No 1, Si
dipme	Case evaluation - Daily Life Activity	Yale Physical Activity Score (YPAS)	radio	¿Aproximadamente cuantas veces durante el ultimo mes ha participado en actividades intensas que duraron al menos 10 minutos, y provocaron importantes aumentos en su respiracion, pulso, cansancio de piernas o le hacían sudar?	0, nunca 1, 1-3 veces por mes 2, 1-2 veces por semana 3, 3-4 veces por semana 4, >5 veces por semana
ti	Case evaluation - Daily Life Activity		radio	¿Aproximadamente durante cuanto tiempo realizo cada vez esta actividad vigorosa?	0, 10-30 min 1, 31-60 min 2, >60 min
sdipme	Case evaluation - Daily Life Activity		calc	Score actividad fisica intensa dias por mes	[dipme]
sti	Case evaluation - Daily Life Activity		calc	Score actividad fisica intensa tiempo	if ([ti] = 0, 1, if ([ti] = 1, 2, 3))
sactfi	Case evaluation - Daily Life Activity		calc	YPAS indice Act Vigorosa	[sdipme]*[sti]*5



pdipme	Case evaluation - Daily Life Activity		radio	¿Piense en los paseos que ha realizado durante el ultimo mes. Aproximadamente cuantas veces al mes fue a pasear al menos 10 minutos o más sin parar pero que no fue suficiente para causar grandes incrementos en la respiración, pulso, cansancio de piernas ni le hacía sudar?	0, nunca 1, 1-3 veces por mes 2, 1-2 veces por semana 3, 3-4 veces por semana 4, >5 veces por semana
pti	Case evaluation - Daily Life Activity		radio	¿Cuando fue a pasear así, durante cuantos minutos camino?	0, 10-30 min 1, 31-60 min 2, >60 min
psdipme	Case evaluation - Daily Life Activity		calc	Score Paseos dias por mes	[pdipme]
psti	Case evaluation - Daily Life Activity		calc	Score Paseos tiempo	if ([pti] = 0, 1, if ([pti] = 1, 2, 3))
spas	Case evaluation - Daily Life Activity		calc	YPAS indice Pasear	[psdipme]*[psti]*3
tiemov	Case evaluation - Daily Life Activity		radio	Aproximadamente cuantas horas al dia pasa moviendose de un lado a otro mientras hace cosas? (Por favor, insistir sobre el tiempo realmente en movimiento)	0, ninguna 1, <1h dia 2, de 1 a 3 h al dia 3, de 3 a 5 horas al dia 4, de 5 a 7 h al dia 5, mas de 7 horas al dia
stiemov	Case evaluation - Daily Life Activity		calc	YPAS indice Movimiento	[tiemov]*3
esdep	Case evaluation - Daily Life Activity		radio	¿Piense en cuanto tiempo paso de pie, como promedio, durante el ultimo mes. Aproximadamente cuantas horas al dia esta de pie?	0, ninguna 1, <1h dia 2, de 1 a 3 h al dia 3, de 3 a 5 horas al dia 4, de 5 a 7 h al dia 5, mas de 7 horas al dia
sesdep	Case evaluation - Daily Life Activity		calc	YPAS indice Bipedestacion	[esdep]*2
tisen	Case evaluation - Daily Life Activity		radio	¿Aproximadamente, en un día típico del último mes, cuantas horas paso sentado/a?	0, ninguna 1, <1h dia 2, de 1 a 3 h al dia 3, de 3 a 5 horas al dia 4, de 5 a 7 h al dia 5, mas de 7 horas al dia
stisen	Case evaluation - Daily Life Activity		calc	YPAS indice Sedestacion	[tisen]*1
sindre	Case evaluation - Daily Life Activity		calc	INIDICE RESUMEN DE ACTIVIDAD FISICA	sum([spas],[stiemov],[sesdep],[stisen])
adherenceprofile	Case evaluation – Adherence profile	Social/Family support	radio	¿Dispone de soporte familiar/social?	0, Apropiado 1, Disposición a ayudar 2, no apropiado
namesupport	Case evaluation – Adherence profile		text	Nombre de la persona de soporte	
contactsupport	Case evaluation – Adherence profile		text	Información de contacto de la persona de soporte	



psycoessions	Case evaluation – Psychologist session		radio	¿Participará en la sesión inicial de evaluación psicológica?	0, Si 1, No
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Personalized work plan definition

Variable Name	Form Name	Section Header	Field Type	Field Label	Choices / calculations
promoPA	Personalized work plan definition - target daily steps	Promotion of physical activity	text	Objetivo diario de pasos	
PAactivities	Personalized work plan definition – promotion of PA		radio	Lugar donde realizar la actividad física	0, En casa 1, En la comunidad 2, Consultas externas
dietaryinterv	Personalized work plan definition – Dietary intervention	Specific dietary intervention	text	Intervención nutricional	
motivMSGmode	Personalized work plan definition – Self-management and education	Self-management and education	radio	Modo de mensaje motivacional	0, Personalizada 1, Predefinida
motivationalMSG	Personalized work plan definition - Self-management and education		text	Mensaje motivacional	
educationaltipsmode	Personalized work plan definition – Educational tips		radio	Modo de información educacional	0, Personalizada 1, Predefinida
educationaltipsMSG	Personalized work plan definition – Educational tips		text	Información educacional	

Work plan execution

Variable Name	Form Name	Section Header	Field Type	Field Label	Choices / calculations
healthstatus	Work plan execution – Health status	Health status	Text	Resultado de la sesión presencial para el seguimiento del estado de salud del paciente.	
mindfulnesspatient	Work plan execution – Psychological intervention	Mindfulness	radio	¿Atiende el paciente a la sesión?	0, Si 1, No



mindfulnesscaregiver	Work plan execution – Psychological intervention		radio	¿Atiende el soporte social/familiar a la sesión?	0, Si 1, No
mindfulnessresult	Work plan execution – Psychological intervention		text	Resultado de la sesión presencial de mindfulness.	
supervisedRehab	Work plan execution - supervised training	High intensity supervised rehabilitation sessions	text	Resultado de la sesión presencial de rehabilitación.	
interviewWeekly	Work plan execution – promotion of PA	Promotion of PA	text	Resultado de la sesión presencial para el seguimiento de la actividad física.	
stepsreported	Work plan execution – PA reported		text	Actividad física reportado por el usuario (podómetro).	
nutrireported	Work plan execution – Nutritional status reported	Nutritional status	text	Resultado de la sesión presencial para el seguimiento del estado nutricional.	
nutrireported	Work plan execution – Nutritional status reported		text	Estado nutricional reportado por el usuario (nutritional app).	
ictexplained	Work plan execution – Explain ICT	Educational session regarding the use of ICT	text	Resultado de la sesión presencial para la explicación del uso de las TIC.	

Discharge

Variable Name	Form Name	Section Header	Field Type	Field Label	Choices / calculations
dischargereason	Discharge - reason	Discharge reason	Text	¿Cuál es el Motivo del alta?	
dischargereport	Discharge - report	Discharge report	Text	Informe del alta	



CONNECARE

CONNECARE
WORKING TEAM REPORT

Case Study 1 - HCB – 1st Cycle – 11/14/2016





CONNECARE

User Document

Working Team Meeting Report

Case Study: 1

Site: Hospital Clínic of Barcelona

Cycle: 2nd

Date: 01/13/2017

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 04-01-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
• • CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 01-20-2017



Document Information

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Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 1 - HCB – 2 nd cycle – 01/13/2017

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Josep Roca / Isaac Cano	Email	jroca@clinic.ub.es
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Abstract	This document reports on the meeting held in Barcelona (Hospital Clínic of Barcelona - HCB) on January 13 th of 2017, regarding CONNECARE case study 1, with the working team with clinicians of HCB.
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1. Executive Summary

1.1 Objectives

The first objective of the meeting was to revise with all participants specific aspects of the intervention that should be given priority in order to be ready to initiate CONNECARE technical developments, such as the definition of service workflows and functional requirements.

Moreover the working team aims to revise and start to define health risk assessment and stratification strategies for case study 1.

1.2 Results

The main result of the meeting was the revised version of case studies workflows for HDOM and LTOT (as presented in Section 2.2). Moreover, the working team concluded to share with all CONNECARE partners the initial version of the protocol for health risk assessment and stratification, which consists of the following main stages:

- i. Start model generation by using retrospective data from HDOM program at hospital Clínic.
- ii. Generate logistic regression models for prediction of readmission and mortality in HDOM.
- iii. Apply Case Based Reasoning to support patient treatment planning by monitoring and adjusting the treatment over time in all CONNECARE case studies.

2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Dra. Carmen Hernández	Head of the Integrated Care unit	Hospital Clínic of Barcelona
Dr. Josep Roca	Chief of the Lung Function Unit	Hospital Clínic of Barcelona
Erik Baltaxe	Medical doctor, consultant Pulmonologist	Hospital Clínic of Barcelona & Sheba Medical Center (Israel)
Dr. Isaac Cano	Digital Health project manager	Hospital Clínic of Barcelona

2.2 Collected Data

The integrated care intervention for Community-based management of CCP– Home Hospitalization and Early Discharge service (HH/ED) service workflow has two sequential phases with specific target outcomes for each of them: i) Short-term intervention to prevent early (30 and 90 days) hospital-related events; and ii) Intervention to enhance community-based long-term management of CCP.

Eligible candidates for inclusion are patients showing moderate to high risk of early re-admission (LACE index ≥ 7)²⁹ recruited immediately after hospital discharge. Additional inclusion criteria to be fulfilled by candidates are: i) living in his/her house within the healthcare sector; ii) having phone at home; and, iii) signing written acceptance to participate in the implementation study. Exclusion criteria for the study are patients with severe psychiatric or neurologic disorders impeding patient collaboration.

The intervention is implemented by a multidisciplinary team from the hospital and from the Primary Care, of advanced-practice nurses, physicians, physiotherapists, community nurses, social workers having a general practitioner as a reference. The collaboration between specialized care and primary care is guided by the reform of specialized care in the healthcare sectors initiated in 2006. The intervention during hospital admission includes a comprehensive assessment of the patient at entry including severity of the primary disease, evaluation of co-morbid conditions and analysis of social support needs. Moreover, a two-hour educational program is administered by a nurse followed by distribution of patient-specific support material. The educational program covers knowledge of primary disease and co-morbidities, instructions on non-pharmacological treatment, administration techniques for proper pharmacological



therapy, and techniques for self-management of the disease and co-morbid conditions including strategies to prevent future severe exacerbations.

The intervention includes a phone call at 24 hours and a home visit at 72 hours after hospital discharge by one member of the multidisciplinary team, if is needed. During this home visit, the therapeutic plan for each patient will be customized to their individual frailty factors and shared with the primary care team. Reinforcement of the logistics for treatment of co-morbidities and social support will be done accordingly. Moreover, the personal health folder will be used for patient empowerment for self-management tool and as a tool to facilitate accessibility to health professionals.

The advance-practice nurses perform regular training sessions to the community-based care teams, coordinate accessibility to specialized care as needed and support functionalities of the personal health folder for the patients admitted into the protocol. The number of home care visits, as well as access to specialized care, during the follow-up 12 month period is individually tailored, and dynamically adapted, to patient needs. Moreover, planned visits by specialized professionals can be scheduled through day hospital or home visits if this was deemed necessary by primary care teams.

The integrated care intervention for management of patients currently under LTOT constitute a representative group of frail multi-morbid individuals requiring cooperative management of multiple actors including community-based health care professionals, specialists and companies providing home-based services. The characteristics and unmet needs of the LTOT group of patients in Barcelona-Esquerria have been described in detail elsewhere¹. The focus of the study is the analysis of the impact of technological tools supporting collaborative management on main outcomes, namely: i) Adequacy of prescription; ii) Adherence; and, iii) enhanced community-based management of the patients.

The Initial Protocol for Health Risk Assessment and Patient Stratification relies on the hypothesis that predictive modelling using clinical data could be significantly improved by enriching computational models with covariates reflecting outcomes from population-based risk prediction (Adjusted Morbidity Grouping,

¹ Hernandez, C. et al. Assessment of health status and program performance in patients on long-term oxygen therapy. *Respir. Med.* (2015). doi:10.1016/j.rmed.2015.01.005.



GMA)². To test this hypothesis, we will develop and validate enhanced clinical predictive modelling for HH/ED with a two-fold aim:

- ✓ During the HH/ED period - To identify risk of early readmission after hospital discharge and to stratify patients in order to optimize care.
- ✓ After HH/ED discharge - To identify risk and to facilitate patient stratification for transitional care purposes.

Enhanced clinical prediction resulting from the novel modelling approaches will feed clinical decision support systems (CDSS) displayed in the professional workstation. Developments and evaluation of the predictive modelling generated in the current study will be carried out and implemented following a stepwise approach. The following milestones (M) are envisaged:

- i. **M1** - Submission of the study protocol to the ethical committee (CEIC) – (17 Feb 2017)
- ii. **M2** – Preparation for SAP data extraction – (15 March 2017)
- iii. **M3** - Initial model development using historical data 2006-2015 – (18 April 2017)
- iv. **M4** - Extraction of SAP clinical data (years 2010 – 2015) – (18 April 2017)
- v. **M5** - Predictive model I (SAP + historical data). Evaluation with 2016 events – (1st May 2017)
- vi. **M6** - Predictive model II enriching M5 with GMA scoring – (1st May 2017)
- vii. **M7** - Report on implementation of case-based reasoning (CBR) strategies – (1st May 2017)
- viii. **M8** - First CDSS prototype – (15th May 2017)
- ix. **M9** - Consolidation of risk assessment strategies for HH/ED & transitional care (1st June 2017)
- x. **M10** - Report & manuscript on risk assessment strategies (30th June 2017) including formulation of subsequent phases of the study. The latter may include feeding predictive modelling with raw data from other clinical sources or from registries of the Catalan Health Surveillance System.

² Dueñas I et al Proposals for enhanced health risk assessment and stratification in an integrated care scenario. BMJ Open, May 2016. doi:10.1038/clpt.2013.24.52.



2.3 Organizational Aspects

Due to agenda constraints, a first tentative meeting with the iSalut office of the Catalan Ministry of Health was postponed. Participants agree on finding a more convenient data to have the tentative meeting.

The Initial Protocol for Health Risk Assessment and Patient Stratification will be developed simultaneously by three different teams closely coordinated to achieve the study aims; that is:

- ✓ Clinical + [Atomian Medical Records](#) + GMA team (M1,M2,M4)
- ✓ Clinical + predictive modelling (standard + CBR) team (M3, M5, M6, M7)
- ✓ Technological (Eurecat) + predictive modelling + Clinical team (M8)
- ✓ All three teams (M9 and M10)

Data management will follow the requirements approved by the Committee on Data Privacy at Hospital Clinic. A non-disclosure agreement (NDA) between IDIBAPS and ATOMIAN has been already signed.

Next step will be to explore the potential of [PADRIS](#) as an umbrella for subsequent phases of the study.

Specific issues to be worked out are covered by the following Annexes to be developed.



3. Next Steps

A new meeting will be scheduled for March 2017.

Before, the following actions are required:

- Consolidation of case studies descriptions and corresponding CMMN on PB3 (February 17th 2017).
- Share health risk assessment and stratification strategies with UNIMORE.



CONNECARE

User Document

Working Team Meeting Report

Case Study: 2 and 3

Site: Hospital Clínic of Barcelona

Cycle: 2nd

Date: 01/03/2017

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 04-01-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
• • CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 01-12-2017



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 2 and 3 - HCB – 2 nd cycle – 01/03/2017

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Josep Roca / Isaac Cano	Email	jroca@clinic.ub.es
Partner	HCB / HCB	Phone	+34 93 227 5747

Abstract	This document reports on the meeting held in Barcelona (Hospital Clínic of Barcelona - HCB) on January 3 rd of 2017, regarding CONNECARE case study 2 and 3, with the working team with clinicians of HCB.
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1. Executive Summary

1.1 Objectives

The first objective of the meeting was to revise with all participants specific aspects of the Preventive patient-centered intervention in complex chronic patients undergoing elective major surgical procedures (PERISURGYCAL), and the Pre-habilitation in high risk candidates for major surgery (PREHAB) intervention, that should be given priority in order to be ready to initiate CONNECARE technical developments, such the definition of service workflows and functional requirements.

Moreover the working team aim to revise and start to define health risk assessment and stratification strategies for case study 1.

1.2 Results

The main result of the meeting was the revised version of case studies workflows for PERISURGYCAL and PREHAB (as presented in Section 2.2).



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Dra. Graciela Martínez	Anesthesiologist	Hospital Clínic of Barcelona
Dr. Josep Roca	Chief of the Lung Function Unit	Hospital Clínic of Barcelona
Dra. Elena Gimeno	Physiotherapist	Hospital Clínic of Barcelona
Anael Barberan	Physiotherapist	Hospital Clínic of Barcelona
Dr. Isaac Cano	Digital Health project manager	Hospital Clínic of Barcelona

2.2 Collected Data

Patients will be considered eligible when they fulfil two or more of the following inclusion criteria: (1) >70 years; (2) Scheduled for major surgery: esophagectomy, gastrectomy, colorectal major surgery, Whipple surgery or major pancreatic resection, hepatic resection, or bariatric surgery; (3) High risk score (risk levels 3-4) for perioperative complications, as assessed by the American Society of Anesthesiologists (ASA) criteria. If considered eligible, the Anesthesiologist proposes the inclusion of the patient into the program.

The service workflow is adapted to the different stages of the surgical event: before surgery, during hospitalization, and after hospital discharge:

Before surgery

Actor - Case manager:

To coordinate the three phases of the programme (before surgery, during hospitalization (including intensive care unit (ICU), ward, and home hospitalization (HH)), and after hospitalization.

Actor - Anesthesiologist:

To propose the inclusion of the patient into the program.

Actor - Nurse:

Empowerment for self-management, including educational material, and information on interventions.

Actor - Physiotherapist:

3 session per week of supervised exercise program combined intervallic aerobic exercise training, upper and lower limbs strength training, and breathing exercises. Individual motivational interview session where in the three main pillars of the working plan will be explained and agreed (co-designed) with the patient. The three main pillars are: i) empowerment for self-management and educational content aiming at generating behavioral change; ii) non-supervised sessions to promote physical activity using ICT, and, iii) explanations on the clinical intervention.

Actor - Nutritionist:



Group sessions on balanced nutrition and protein-enriched diets in low risk patients. Individualized sessions and nutritional intervention in patients at risk of malnutrition or overweight.

Actor - Psychologist:

Group sessions for patients and their relatives.

During hospitalization:

Case manager:

Transitional care through ICU (if it was needed), ward, and HH.

Anesthesiologist:

Follow-up the clinical situation of the patient. Intervention related to specific clinical situation.

Nurse:

Empowerment for self-management, including educational material, and information on interventions.

Physiotherapist:

Specific intervention of physiotherapy related to surgery. Early mobilization and adaptation of the physical activity intervention depending on environment: ICU, ward, and HH. Empowerment for self-management for after hospitalization phase.

After hospitalization:

Case manager:

Transitional care to HH to community care.

Anaesthesiologist:

Follow-up the clinical situation of the patient. Intervention related to specific clinical situation.

Nurse:

Empowerment for self-management, including educational material, and information on interventions.

Physiotherapist:

Personalization of the program for promotion of physical activity using ICT:

- Home-based: indoor walking and functional exercises (i.e.: sit-to-stand exercise, stairs climbing, elastic bands, etc...).
- Community-based activities (individual or group based-sessions) - Walking either in individual or groups sessions (the first objective will be to add 1000 steps to the daily average. After a week and depending on the daily average steps performed, keep increasing the walking routine until the patient reach 5000 to 6000 steps per day. If the condition of the patient allows it, keep increasing up to 10,000 steps per day).
- Wellness center (individual or group-based sessions) - The selection of the exercise routines and activities will depend on the patient's preferences and clinical profile (this option will be mainly focused in mild patients with physically healthy lifestyle).



The Activapp Mobile APP will support the execution & follow-up of the personalized work plan; by, i) providing patient access to on-line educational material, ii) patient data collection (automatic & manual), and, iii) patient interactions (mostly off-line) with health professionals. Moreover, the interaction of Activapp with LMS would allow such information to be pulled to the electronic medical record by the health professional.

2.3 Organizational Aspects

Participants agree on aligning case study 2 & 3 needs for patient self-management with the Catalan personal health folder (Cat@Salut La Meva Salut - <https://lamevasalut.gencat.cat>) and the Catalan strategy for mHealth (AppSalut - <https://appsalut.gencat.cat>). To this end, participants will describe service requirements for integration with Cat@Salut La Meva Salut using a standard form provided by the iSalut office of the Catalan health ministry.



3. Next Steps

A new meeting will be scheduled for March 2017.

Before, the following actions are required:

- Consolidation of case studies descriptions and corresponding CMMN on PB3 (February 17th 2017).



6.1.2 Lleida (Spain)



CONNECARE

User Document	
Working Team Meeting Report	
Case Study: 1	Site: Lleida
Cycle: 1st	Date: 22/11/2016

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
• • CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 29-11-2016



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 1 - Lleida – 1 st cycle – 22/11/2016

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Jordi de Battle / Eloisa Vargiu	Email	eloisa.vargiu@eurecat.org
Partner	IRBLL / EURECAT	Phone	

Abstract	This document reports on the meeting held in Lleida on November 22 nd , 2016 with the working team with clinicians for the Hospital of Santa Maria and the Hospital Arnau i Vilanova en Lleida.
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1. Executive Summary

1.1 Objectives

This was the first meeting participated by clinicians from Hospital Santa Maria, Hospital Arnau de Vilanova and Primary care of the Health Care area of Lleida. Thus, the first objective of the meeting was to explain to all participants what CONNECARE is and it is aimed at.

Once explained the overall project, its objective, and the importance of clinical trials in it, the Case Study 1 has been explained in detail in order to gather feedback from the participants. In fact, they cover all the roles expected in the Case Study: case manager, clinician, nurse, and social worker.

1.2 Results

The main result of the meeting was the awareness by all participants about the project and its specific case study, as well as their involvement and acceptance to take part in all the activities regarding the definition of this clinical trial in Lleida, first, and, subsequently, its set off in the involved hospitals.

2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Anna Perez	Internal medicine physician	Hospital de Santa María
Araceli Fuentes	Primary care physician	Health care area of Lleida
Eloisa Vargiu	Technician	Eurecat
Ferran Barbé	Pneumologist	Hospital Arnau de Vilanova Hospital de Santa María
Gerard Torres	Internal medicine physician	Hospital de Santa María
Jordi de Batlle	Epidemiologist	IRBLleida
Jose Maria Martinez	Case manager	Hospital de Santa María
Juan Manuel Fernández	Technician	Eurecat
Kitiara Prunera	Technician	Eurecat
Luis Fernando Casas	Pneumologist	Hospital Arnau de Vilanova
María Mingot	Social worker	Hospital de Santa María
Miquel Mesas	Computer department	Hospital de Santa María
Nuria Nadal	Primary care physician	Health care area of Lleida
Pilar Blanco	Nurse	Hospital de Santa María

2.2 Collected Data

The workflow for Case Study 1 is presented, for each step a proposal is given and feedback from the participants is collected in order to better define or align to the needs of the two hospitals represented in the meeting.

- Case Identification
 - LACE will be used as inclusion criteria metrics (greater than 7 will be the threshold for inclusion). LACE will be performed and calculated the first 3 days of hospital admission by the Clinician.
 - In case LACE > 7, 3-5 questions will be presented to the patients to calculate her/his technology level in order to be sure that s/he be able to use the self-management system (SMS). Questions will be presented by the Case Manager.
- Case Evaluation
 - The following questionnaires and scale will be used:



- Pfeiffer – only to patients older than 70 years old. The Pfeiffer will be managed by the Nurse.
- HAD. Since, it is an auto-check test it could be part of the SMS. HAD test is an autotest that will be managed by the Nurse.
- Barthel. It is mandatory and it could be answered through the SMS. Barthel will be managed by the Nurse.
- Depending on the diagnostic area a different questionnaire/scale will be adopted; Questionnaires will be managed by the Clinician:
 - Last 6 month NYHA, for cardiac insufficiency;
 - GOLD 2017, for COPD.
- Regarding the compliance, information may be gathered directly from the pharmacy data base of eCAP (primary care), so they could be accessed through the ACM. The Clinician will be in charge of managing it.
- As for the level of “complexity” of the patient, specific questions must be made to her/him. Other skills (such as, for instance, how to inject insulin) must be verified depending on the specific patient. The Nurse will be in charge of doing it.
- Another important issue to be taken into account is the “accessibility” of patients to medicine and medical accessories. It could be not always easy due to economic problems since some medication could be very expensive. The Clinician has to present to the patient direct questions to clarify that, with special regard to the possibilities of oxygen-therapy compliance
- Social aspect must be also take into account regarding: dwelling (e.g., the patient lives at the 3rd floor without a lift in the building); family (e.g., s/he is living alone and/or is widow(er)); the ability of the carer; and self-care (in this case, auto-test may be used). The Nurse will manage these issues.
- Personalized interventions
 - Patients will receive different interventions depending on the risk stratification results (from the Case Evaluation step). The automation in selecting the intervention is part of the work on clinical decision support systems by UNIMORE.
 - Some proposals have been given specifically for the patient:
 - Physical activity monitoring (specially for COPD patients) (link to Case Study 3 in Barcelona).
 - Nutritional support (at the educational level).
 - Proposals for familiars and carers are also considered. The Case Manager will manage them.



- Hospitalization/discharge app to familiars for follow-up during the hospitalization and to be automatically informed on the discharge.
- Training for carers

2.3 Organizational Aspects

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3. Next Steps

A new meeting will be scheduling in January.

Before, the following actions are required:

- More information on the Gold programme 2017 (<http://goldcopd.org/>) shared with all the participants;
- List of questions (4-5) for COPD patients related to the use of oxygen;
- Proposal of auto-check test (4-5 questions). Respiratory, internal medicine and primary care Physicians will make a proposal.
 - COPD patients;
 - patients suffering of cardiac insufficiency;
 - to define how interpret results (1 no changes, 2 worsening, ...).
- Proposal of technology adherence questionnaire (4-5 questions); (The case manager will make a proposal.
- Characterize the interventions applicable in Lleida hospitals:
 - To highlight those already proposed during the meeting that will be doable in Lleida;
 - To add furthers that have not been considered in the current proposal (e.g., physical activity). Luis Fernando Casas will make a proposal.
- Characterize the risk stratification applicable in Lleida hospitals:
 - To highlight the areas in which improvements may be done and in which do not;
 - List the possible risk stratification technique for the area in which improvements may be done.



CONNECARE

User Document	
Working Team Meeting Report	
Case Study: 2	Site: Lleida
Cycle: 1st	Date: 30/11/2016

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
· · CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 5-12-2016



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 2 - Lleida – 1 st cycle – 30/11/2016

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Jordi de Battle / Eloisa Vargiu	Email	eloisa.vargiu@eurecat.org
Partner	IRBLL / EURECAT	Phone	

Abstract	This document reports on the meeting held in Lleida on November 30 nd , 2016 with the working team with clinicians for the Hospital of Santa Maria and the Hospital Arnau i Vilanova en Lleida.
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1. Executive Summary

1.1 Objectives

This was the first meeting participated by clinicians from Hospital Santa Maria, Hospital Arnau de Vilanova and Primary care of the Health Care area of Lleida. Thus, the first objective of the meeting was to explain to all participants what CONNECARE is and it is aimed at.

Once explained the overall project, its objective, and the importance of clinical trials in it, the Case Study 2 has been explained in detail in order to gather feedback from the participants. In fact, they cover all the roles expected in the Case Study: case manager, clinician, nurse, and social worker.

1.2 Results

The main result of the meeting was the awareness by all participants about the project and its specific case study, as well as their involvement and acceptance to take part in all the activities regarding the definition of this clinical trial in Lleida, first, and, subsequently, its set off in the involved hospitals.

2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Albert Bigorda	Physioterapist	Hospital de Santa María
Araceli Fuentes	Primary care physician	Hospital de Santa María
Dolors Del Pozo	Anesthesiologist	Hospital de Santa María
Eloisa Vargiu	Technician	Eurecat
Frances Pallisó	Orthopedics surgeon	Hospital de Santa María
Gerard Torres	Internal medicine physician	Hospital de Santa María
Jordi Colomina	Orthopedics surgeon	Hospital de Santa María
Jordi de Batlle	Epidemiologist	IRBLleida
Josep Maria Martinez	Case Manager	Hospital de Santa María
Josep maria Terrats	Management Department	Hospital de Santa María
Juan Manuel Fernández	Technician	Eurecat
Kitiara Prunera	Technician	Eurecat
Luis Manbrona	Rehabilitation physician	Hospital de Santa María
Maria Aguilà	Nurse	Hospital de Santa María
Miquel mesas	Computer department	Hospital de Santa María
Oscar Sacristan	Internal medicine physician	Hospital de Santa María
Reis Drudis	Anesthesiologist	Hospital de Santa María
Teresa Rodriguez	Management Department	Hospital de Santa María



2.2 Collected Data

The workflow for Case Study 2 is presented, for each step a proposal is given and feedback from the participants is collected in order to better define or align to the needs of the two hospitals represented in the meeting.

- Case Identification
 - All the following inclusion criteria are considered for people more than 70 years old:
 - A Charlson index ≥ 3 will be the threshold for inclusion. Charlson will be performed by the Clinician. Independently by the Charlson index, if the patient has one or more chronic diseases (not osteoarthritis) is included in the programme.
 - Poly-pharmacy is also considered: 4 or more than 4 pills per day. The Nurse is in charge to verify that.
 - Hospital admission or emergency department visits during the last year. The Clinician is in charge to verify that.
 - ASA II/III. The ASA test will be performed by the Anesthesiologist.
 - GMA group 3 or 4, it will be automatically generated by the SAP of the Hospital. It has to be decided if this criteria will be used or not.
 - In case the other criteria are passed by the patient, questions will be presented to her/him to calculate the technology level in order to be sure that s/he be able to use the self-management system (SMS). Questions will be presented by the Case Manager.
- Case Evaluation
 - The following questionnaires and scale will be used:
 - Pfeiffer. The Pfeiffer will be managed by the Nurse.
 - HAD. Since, it is an auto-check test it could be part of the SMS. HAD test is an autotest that will be managed by the Nurse.
 - Barthel. It is mandatory and it could be answered through the SMS. Barthel will be managed by the Nurse.
 - Self-tests for calculating the severity of arthrosis will be managed by the Nurse: Oxford12 or WOMAC (to be decided). This test will be answered 1-2 months before the hospitalization (in outpatient area).
 - After the hospitalization, a pain test will be managed by the Nurse: EVA or another to be selected (to be decided).
 - Regarding the compliance, before the hospitalization, information may be gathered directly from the pharmacy data base of eCAP (primary care), so they could be acceded through the ACM. The Clinician will be in charge of managing it.



- As for the level of “complexity” of the patient, specific questions must be made to her/him. The Nurse will be in charge of doing it.
- Required skill must be verified and recommendations given to the patient. The Nurse will be in charge of this task.
- Social aspect must be also take into account regarding: dwelling (e.g., the patient lives at the 3rd floor without a lift in the building); family (e.g., s/he is living alone and/or is widow(er)); the ability of the carer; and self-care (in this case, auto-test may be used). The Nurse will manage these issues and the Social worker will be involved in case of the need of a deep assessment of the patient.
- Self-care aspects will be also taken into account (to decide). The Nurse will be in charge of this. .Because there is not a validated consensual test for surgery patients. The nurse will make a proposal of short test.
- Personalized interventions
 - Patients will receive different interventions depending on the risk stratification results (from the Case Evaluation step).
 - A list of recommendations related with the pharmacological treatment will be automatically given. The automation in selecting the pharmacological treatment is part of the work on clinical decision support systems by UNIMORE.
 - Before the surgery, nutritional intervention should be considered (diet proteins, change of diet, suppliers). The primary care physician will be involved in these issue when s/he receives the communication that the patient will go to orthopedic arthroplasty. A support of App for nutrition is expected.
 - Educational material in form of videos should be given for learning about nursing. This material should be given during or after the hospitalization.
 - Some proposals have been given specifically for the patient:
 - App PROM (Patient Reported Outcomes)
 - To follow-up of daily evolution of the patient
 - physical activity (pedometer, GPS, pulse-oximetry)
 - rehabilitation
 - pain evolution (app de ADI may be evaluated).
 - First days habits evolution (deposition and urination)
 - App for nutrition
 - To give educational support
 - Devices
 - Heart frequency (with a device with thresholds for sending alerts)
 - Pulse-oximetry



- Virtual visits (clinician, nurse, case manager).
- Proposals for familiars and carers are also considered. The Case Manager will manage them.
 - App Pre-Hospitalization/ Hospitalization/Discharge app for familiars
 - To provide ongoing update of the patient during hospitalization.
 - To ask about extra clinic information needed during hospitalization.
 - To provide information about the Hospital discharge process to the family or carer.

2.3 Organizational Aspects

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3. Next Steps

A new meeting will be scheduling in January.

Before, the following actions are required:

- Decide if using GMA or not.
- Make a decision between Oxford12 and WOMAC self-tests;
- Make a decision regarding the pain test to be used.
- Regarding barriers, it has to verify if economic barriers may affect the accessibility to medicine and/or medical accessories
- Define specific skills (positive and negative) that are required.
- Define 3-4 questions for self-care.



CONNECARE

User Document	
Working Team Meeting Report	
Case Study: 1	Site: Lleida
Cycle: 1st	Date: 24/1/2017

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
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Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 1 - Lleida – 1 st cycle – 24/1/2017

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Jordi de Battle / Eloisa Vargiu	Email	eloisa.vargiu@eurecat.org
Partner	IRBLL / EURECAT	Phone	

Abstract	This document reports on the meeting held in Lleida on January 24 th , 2017 with the working team with clinicians for the Hospital of Santa Maria and the Hospital Arnau i Vilanova en Lleida.
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1. Executive Summary

1.1 Objectives

Starting from results and feedback from the first meeting held on November 22nd, 2016, the goal of this meeting was to refine the work and to propose consolidate the proposal on how Case Study 1 will be performed in Lleida.

This meeting was participated by clinicians from Hospital Santa Maria, Hospital Arnau de Vilanova and Primary care of the Health Care area of Lleida.

1.2 Results

The main result of the meeting was the selection of the standard questionnaires to be passed to patients (with COPD and hearth failure), the definition of the self-check questionnaires to be provided to the patients during the Case Evaluation phase and a review of the interventions to be provided to patients depending on their health status and risk.

2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Anna Perez	Internal medicine physician	Hospital de Santa María
Araceli Fuentes	Primary care physician	Health care area of Lleida
Eloisa Vargiu	Technician	Eurecat
Gerard Torres	Internal medicine physician	Hospital de Santa María
Jordi de Batlle	Epidemiologist	IRBLleida
Jose Maria Martinez	Case manager	Hospital de Santa María
Juan Manuel Fernández	Technician	Eurecat
María Mingot	Social worker	Hospital de Santa María
Miquel Mesas	Computer department	Hospital de Santa María
Nuria Nadal	Primary care physician	Health care area of Lleida
Pilar Blanco	Nurse	Hospital de Santa María
Montserrat Boix	COPD Patient	

2.2 Collected Data

- Case Identification
 - Technological skills (proposal by J.M. Martinez)
 - A questionnaire will be passed to the patients to know the technological level. In particular, the patients will be asked if s/he is able to use a smartphone, a tablet, and/or a PC.
 - The same questionnaire will be passed to the caregiver.
 - In case that neither the patient nor the caregiver are able to use these devices, the patients is excluded from the programme.
 - The use case team decided to improve the questionnaire asking about if there is connection to the net from patient’s home. Additionally, it is considered the need of an automated analysis of the results to decide the ability of the case to be involved.
- Case Evaluation
 - For patients with COPD (proposal by Dr Luis Fernando Casas), the GOLD 2017 will be used. Results of spirometry tests in the last 2 years will be used. Symptoms (dyspnea and escalation) with respect to exacerbations will be considered to select the patients.



In Figure 1, patients in C and D will be included. The dyspnea will be assessed by using the mMRC questionnaire.

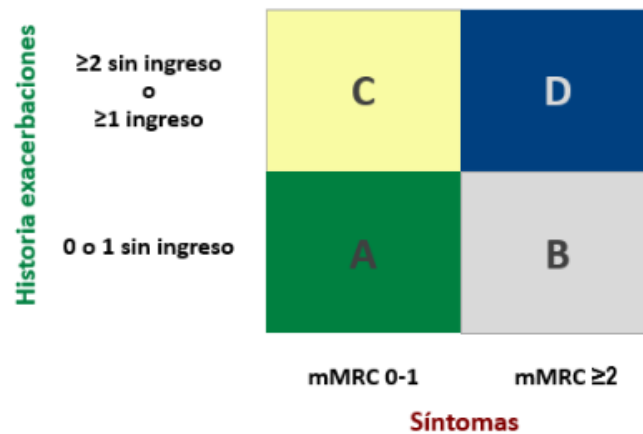


Figure 1 - Categorization with the GOLD 2017.

- Additionally, for COPD patients, CODEX could be used (proposal by Gerard Torres). In fact, with the same data for the GOLD 2017, also the CODEX can be calculated. CODEX severity scale for COPD includes comorbidity assessed by using the Chalon index, airway obstruction assessed by spirometry, Dyspnea assessed by using mMRC scale and, finally, the history of exacerbations of COPD the last year that lead the patient to hospital admission or emergency room consultation. In doing so, also an accurate estimation of the re-hospitalization risk (short term, 3 months, long term, 12 months, and mortality) is calculated.
- Treatment of smoking patients. A questionnaire is proposed by Dr Luis Fernando Casas (see Figure 2). The key questions will be if the patients wants to stop smoking and if the patient can pay the treatment costs.

-¿Está usted dispuesto a dejar de fumar? Si / No

-¿Ha probado otras veces algún tratamiento con medicamentos para dejar de fumar? Si / No

-¿Cuál ha sido el motivo por el cual no finalizó el tratamiento?

- Falta de efectividad: Si / No.

- Costes del tratamiento: Si / No.

- Imposibilidad para el desplazamiento o no disponibilidad de consulta antitabaco cercana: Si / No.

- Efectos secundarios intolerables: Si / No.

- Otros motivos: Si / No.

Figure 2 - Proposal of a questionnaire for smoking patients.

- Also questions regarding the oxygen-therapy treatment have been proposed by Dr Luis Fernando Casas (see Figure 3).



- However, this questions are considered not necessary because the Spanish law subsidizes power costs in case not being able to pay if the patient has a health problem such as home oxygenotherapy

-¿ Tiene luz eléctrica en su casa? Si / No

-¿Ha utilizado alguna vez oxígeno en su domicilio? Si / No

-¿Ha notado algún cambio en la factura de la electricidad desde utiliza el oxígeno? Si / No

-En caso afirmativo a la pregunta anterior: **¿El incremento de la factura de la luz ha supuesto una limitación para utilizar el oxígeno en su domicilio?**

Figure 3 - Proposal of questions on oxygen-therapy treatment.

- Several self-check questionnaires to both patients with COPD and heart failure have been proposed.
 - For COPD patients, the working team selected the one proposed by Araceli Fuentes suitably modified to take into account also night time (see the current proposed version in Figure 4).

Responda con una cruz en la casilla correspondiente, según los síntomas que presente , si se mantienen igual o han empeorado.

	IGUAL	PEOR
El ahogo o falta de aire		
Los ruidos respiratorios o pitos		
La tos		
Arranca más mucosidad o es más oscura, verde o espesa?		

1 sola respuesta afirmativa : vigilancia
2 o mas respuestas afirmativas: Alarma

Figure 4 - First proposal of self-check questionnaire for patients with COPD (to be updated and refined).

It is still to be decided and agreed with which frequency the patient will be asked to answer this questionnaire.

- For heart failure patients, the questionnaire proposed by Gerard Torres (in Figure 5) will be modified according to the one proposed for COPD patients.



	Menos que en días anteriores.	Mas o menos igual que siempre.	Mas que en días anteriores.
Me ahogo			
	Mejor que en días anteriores.	Mas o menos igual que siempre.	Peor que en días anteriores.
He dormido			
	Menos cargado o hinchado que en días anteriores.	Mas o menos igual que siempre.	Menos cargado o hinchado que en días anteriores
Me Siento			
En Insuficiencia cardiaca (además)			
	Mas que en días anteriores	Mas o menos igual que siempre.	Menos que en días anteriores
Orino			
	Bien o meenos hinchados que en días anteriores	Mass o menos igual que siempre.	Más hinchados que en días anteriores
Tengo los pies			

Score: IC : (5 items) \geq 2: (alarma)

Figure 5 - First proposal of self-check questionnaire for patients with HF (to be updated and refined according to the one proposed for COPD patients).

- Interventions.
 - Clinical interventions
 - Recommendations related with the pharmacological treatment;
 - Nutritional supplies;
 - Nurse learning in modules;
 - Home visits by the nurse;
 - Home visits by medical doctors;
 - Device monitoring through the interface
 - Social interventions
 - Recommendations for the social worker (primary care) based on the evaluation made in the hospital by familiars y caregiver;
 - Providing a caregiver for a given amount of hours;
 - Providing tele-assistance;
 - Providing access to medical box with week medication.
 - Technological interventions
 - Hospitalization/discharge app to familiars for follow-up. It may:
 - Provide information regarding the hospitalization;
 - Be allowed to ask familiars and caregiver about some information needed during the hospitalization;
 - Report on the discharge.
 - App for nutrition. It may:



- Give a learning support regarding the nutrition.
- Suitable devices may give the following data/measures:
 - Weight;
 - Oxygen saturation;
 - Arterial pressure;
 - Hearth rate;
 - Glucose;
 - Physical activity monitoring;
 - Automatic alarms and alerts in case some thresholds have been passed.
- Self-checking tests (COPD and HF)
- Support for caregiver training.
- Virtual visits (i.e., videoconference)
- A forum (chat-messaging) to allow professionals to communicate each others and to allow professional to communicate with the patient.
- Interventions linked to areas of improvement.
 - A list of proposed actions to different areas (cognitive, emotive, functional, anthropometric, clinic, adherence, social) has been given. The full list is in the pptx document showed during the presentation.

2.3 Organizational Aspects

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3. Next Steps

A new meeting will be scheduling on March 29th, 2017.

Before, the updated version of the self-check questionnaires will be shared with all the participants and feedback from this meeting will be shared with ADI to improve the current version of mock-ups.

Results from the 2 meetings held in Lleida will be presented during the next (virtual) Project Board on February 16th, 2017.



CONNECARE

User Document

Working Team Meeting Report

Case Study: 2

Site: Lleida

Cycle: 1st

Date: 24/1/2017

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
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Revision: 01

Date: 26-1-2017



Document Information

Project Number	689802	Acronym	CONNECARE
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Project officer	Hubert Schier		

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Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Jordi de Battle / Eloisa Vargiu	Email	eloisa.vargiu@eurecat.org
Partner	IRBLL / EURECAT	Phone	

Abstract	This document reports on the meeting held in Lleida on January 24 th , 2017 with the working team with clinicians for the Hospital of Santa Maria and the Hospital Arnau i Vilanova en Lleida.
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1. Executive Summary

1.1 Objectives

Starting from results and feedback from the first meeting held on November 30th, 2016, the goal of this meeting was to refine the work and to propose consolidate the proposal on how Case Study 2 will be performed in Lleida.

This meeting was participated by clinicians from Hospital Santa Maria, Hospital Arnau de Vilanova and Primary care of the Health Care area of Lleida.

1.2 Results

The main result of the meeting was the selection of a standard questionnaire to be passed to patients, a preliminary definition of the self-check questionnaires to be provided to the patients during the Case Evaluation phase and a review of the interventions to be provided to patients depending on their health status and risk.

2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Albert Bigorda	Physioterapist	Hospital de Santa María
Araceli Fuentes	Primary care physician	Hospital de Santa María
Eloisa Vargiu	Technician	Eurecat
Gerard Torres	Internal medicine physician	Hospital de Santa María
Jordi Colomina	Orthopedics surgeon	Hospital de Santa María
Jordi de Batlle	Epidemiologist	IRBLleida
Josep Maria Martinez	Case Manager	Hospital de Santa María
Juan Manuel Fernández	Technician	Eurecat
Maria Aguilà	Nurse	Hospital de Santa María
Miquel Mesas	Computer department	Hospital de Santa María
Oscar Sacristan	Internal medicine physician	Hospital de Santa María
Reis Drudis	Anesthesiologist	Hospital de Santa María

2.2 Collected Data

- Case Identification
 - Technological skills (proposal by J.M. Martinez)
 - A questionnaire will be passed to the patients to know the technological level. In particular, the patients will be asked if s/he is able to use a smartphone, a tablet, and/or a PC.
 - The same questionnaire will be passed to the caregiver.



- In case that neither the patient nor the caregiver are able to use these devices, the patients is excluded from the programme.
 - The use case team decided to improve the questionnaire asking about if there is connection to the net from patient's home. Additionally, it is considered the need of an automated analysis of the results to decide the ability of the case to be involved.
- Case Evaluation
 - The questionnaire that will be used is WOMAC (The Western Ontario and McMaster Universities Osteoarthritis Index), a questionnaire that has been translated in Spanish and accepted as a standard¹.
 - A discussion on the self-check questionnaires to be used has been done and some proposals sketched
 - Self-care proposed by M. Aguilà based on 4 questions
 - Exercises
 - Wound care
 - Alarm signs in the wound
 - What can I do and what not the first days?
 - Habits monitoring proposed by J.M. Martínez and M- Aguilà. One solution could be to use the Bristol stool scale for monitoring depositional habit. However, monitoring the first days post discharge the voiding habit and some signs and symptoms as fever, dizziness and nausea might be also necessary. It has been also pointed out that previous habits should be known and considered to may note changes. Therefore, a short and easy scale including all these considerations will be developed
 - Pain evaluation proposed by R. Drudis: in the short term Numerical analog scale of pain, whereas in the long term this scale for pain assessment plus further questions might be necessary (to be decided). A proposal for using the "Brief Pain Inventory (Short Form)" is on the table.
 - A follow-up and recommendations in drugs taking should be provided².
 - An app to monitor physical activities to help during rehabilitation might be provided³.
 - Interventions.
 - Clinical interventions

¹ <http://www.performanceptpc.com/paperwork/womac.pdf>

² In the project, it could be part of the recommendation systems that will be provided in WP4 by UNIMORE.

³ The app provided by EURECAT (namely, ActivApp) can be used.



- Recommendations related with the pharmacological treatment;
- Nutritional supplies;
- Nurse learning in modules;
- Home visits by the nurse;
- Home visits by medical doctors;
- Device monitoring through the interface
- Social interventions
 - Recommendations for the social worker (primary care) based on the evaluation made in the hospital by familiars y caregiver;
 - Providing a caregiver for a given amount of hours;
 - Providing tele-assistance;
 - Providing access to medical box with week medication.
- Technological interventions
 - Hospitalization/discharge app to familiars for follow-up. It may:
 - Provide information regarding the hospitalization;
 - Be allowed to ask familiars and caregiver about some information needed during the hospitalization;
 - Report on the discharge.
 - App for the patient “PROM: Patient Reported Outcomes” to follow-up patient’s evolution in terms of physical activity, rehabilitation, and pain evaluation.
 - App for nutrition. It may:
 - Give a learning support regarding the nutrition.
 - Suitable devices may give the following data/measures:
 - Hearth rate;
 - Physical activity monitoring;
 - Weight.
 - Support for training the patient and the caregiver
 - Virtual visits (i.e., videoconference)
 - A forum (chat-messaging) to allow professionals to communicate each others and to allow professional to communicate with the patient.
- Interventions linked to areas of improvement.
 - A list of proposed actions to different areas (cognitive, emotive, functional, anthropometric, clinic, adherence, social) has been given. The full list is in the pptx document showed during the presentation.

2.3 Organizational Aspects

--



3. Next Steps

A new meeting will be scheduling on March 29th, 2017.

Before, a full definition of the self-check questionnaires will be shared with all the participants and feedback from this meeting will be shared with ADI to improve the current version of mock-ups.

Results from the 2 meeting held in Lleida will be presented during the next (virtual) Project Board on February 16th, 2017.



CONNECARE

User Document	
Working Team Meeting Report	
Case Study: 1	Site: Lleida
Cycle: 1st	Date: 29/3/2017

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
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Work Package	Number	2	Title	Case study 1 - Lleida – 1 st cycle – 24/1/2017

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Jordi de Battle / Eloisa Vargiu	Email	eloisa.vargiu@eurecat.org
Partner	IRBLL / EURECAT	Phone	

Abstract	This document reports on the meeting held in Lleida on March 29 th , 2017 with the working team with clinicians for the Hospital of Santa Maria and the Hospital Arnau i Vilanova en Lleida.
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1. Executive Summary

1.1 Objectives

Being the last meeting of the 1st PDSA cycle, the objective of this working team meeting was triplex: (i) to provide a summary of the work done during this first cycle; (ii) to present the current version of the workflow according to requirements and feedback received in the previous meetings; and (iii) to compile the evaluation form corresponding to the 1st PDSA cycle.

The meeting was participated by clinicians from Hospital Santa Maria, Hospital Arnau de Vilanova and Primary care of the Health Care area of Lleida. Each clinician received a manual with the description of the case study¹. As in the previous meeting, also 1 COPD patient participated.

1.2 Results

The main result of the meeting was resuming, putting in common and agreeing the work done during the 1st PDSA cycle in order to give it as input for the next cycle. Results from this cycle will be used from the technical partners to starting the implementation of the SACM and its user interface (WP3) and of the SMS and its user interface (WP4). In fact, after the meeting, IRBLL and EURECAT reviewed the current version of the mock-ups of both SACM and SMS. Feedback from clinicians has been shared with the corresponding technical partners.

¹ The manual (in Spanish) is given in the Appendix at the end of this document.



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Anna Perez	Internal medicine physician	Hospital de Santa María
Araceli Fuentes	Primary care physician	Health care area of Lleida
Eloisa Vargiu	Technician	Eurecat
Gerard Torres	Internal medicine physician	Hospital de Santa María
Jordi de Batlle	Epidemiologist	IRBLleida
Jose Maria Martinez	Case manager	Hospital de Santa María
Felip Miralles	CONNECARE scientific coordinator	Eurecat
Juan Manuel Fernández	Technician	Eurecat
Miquel Mesas	Computer department	Hospital de Santa María
Nuria Nadal	Primary care physician	Health care area of Lleida
Pilar Blanco	Nurse	Hospital de Santa María
Montserrat Boix	COPD Patient	
Luis Fernando Casas	Pneumologist	Hospital Arnau de Vilanova
Francisca Guiralt	Quality department	Hospital de Santa María

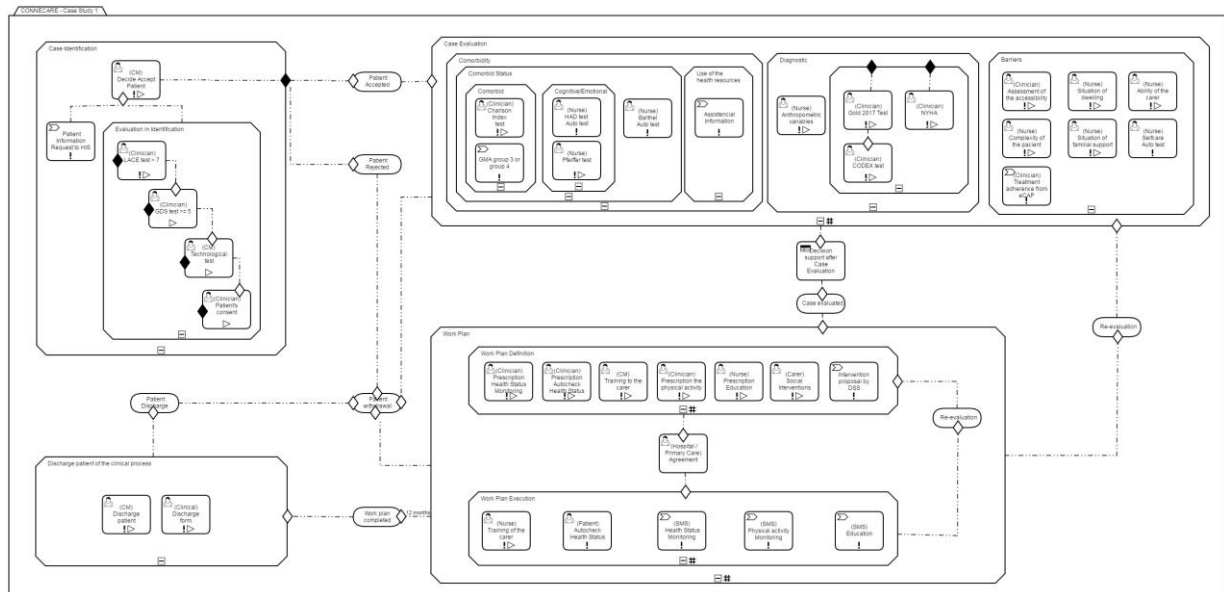
2.2 Collected Data

Questionnaires in which actions were required from the previous meeting have been reviewed to reach a final agreement:

- Technological skills;
- Treatment of smoking patients;
- Self-check to both patients with COPD and heart failure;
- Self-care.

The full list of interventions has been reviewed and an agreement reached.

The last version of the CMMN diagram has been presented by EURECAT and some changes have been required by clinicians to better fit with the changes from the previous meetings. The updated diagram is depicted in Figure:



At the end of the meeting, participants have been asked to anonymously fill the evaluation form corresponding to the 1st PDSA cycle. The filled forms have been collected and results put in the RedCap.

2.3 Organizational Aspects

Miquel Mesas from the Computer Department of the Hospital Santa Maria proposed a solution to extract data from the SAP (number of prior hospitalizations and emergency room visits, hospital and primary care). This temporary solution will be adopted for the StudyRelease expected on M18 (September 2017) and removed once the full integration of the CONNECARE system will be available.



3. Next Steps

A new meeting has been scheduled on May 30th, 2017 and will be part of the 2nd PDSA cycle of the project. Results from that meeting will be reported in the GA meeting on June 26th, 27th in London.



Appendix: Manual of the CS1 in Lleida

Manual de procedimientos. Use Case 1: Pacientes crónicos complejos ingresados

CONNECARE. LLEIDA.

Hospital Universitario de Santa Maria.

Hospital Universitario Arnau de Vilanova.



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 2. LACE
 3. GDS
 4. Procedimiento de identificación del caso
- **Evaluación del caso:**
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 - 1.1. VALORACIÓN COMORBILIDAD
 - Test de Charlson
 - 1.2. VALORACION COGNITIVA Y EMOCIONAL
 - 1.2.1. Valoración del deterioro cognitivo. TEST de Pfeiffer.
 - 1.2.2. Valoración emocional. HAD test (AUTOTEST).
 - 1.3. VALORACIÓN DEL ESTADO FUNCIONAL. Test de Barthel.
 2. VALORACIÓN DE CLINICA
 - 2.1 Procedimientos a realizar por enfermería.
 - 2.2 Procedimientos a realizar por el médico.
 - 2.2.1. Hábitos: Tabaco y/o ingesta de sal.
 - 2.2.2. Según tipología de paciente
 - A/ Pacientes con EPOC o EPOC predominante.*
 - 1/ Escala mMRC de disnea
 - 2/ Datos espirométricos.
 - 3/ Exacerbaciones.
 - Escalas para EPOC construidas
 - a/ GOLD 2017:
 - b/ CODEX
 - c/ Test tabaquismo.
 - B/ Pacientes con IC predominante.*
 - Clase funcional NYHA.*
 3. VALORACION DE BARRERAS
 - 3.1 Adherencia/ Tratamiento



- *Cumplimiento.*

- *Complejidad/ Habilidad para ejecutarlo.*

3.2 Social

- *Vivienda.*

- *Autocura/ Soporte familiar/ Cuidador.*

Test de Autocura:

1/ Paciente con insuficiencia cardiaca

2/ Paciente con EPOC

- **Definición del plan de trabajo**

1/ Autotest pacientes con EPOC.

2/ Autotest pacientes con Insuficiencia cardiaca.



IDENTIFICACIÓN

DEL CASO



1. Cribaje tecnológico

Actor: Gestor de casos

- Usted o su cuidador tienen conexión a internet?
 - NO
 - SI :
 - Usted utiliza:
 - Teléfono móvil (no solo para llamar).
 - Tablet.
 - Ordenador personal.
 - Ninguno.
 - Su cuidador principal utiliza:
 - Teléfono móvil (no solo para llamar).
 - Tablet.
 - Ordenador personal.
 - Ninguno.

Valoración:

* Cualquier respuesta excepto “ninguno” supone que el paciente es apto.

Si no es apto no debe progresar el proceso de identificación.



2. LACE

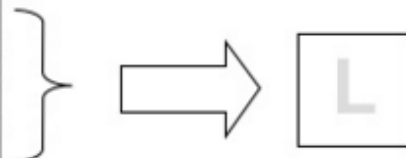
Actor: Medico

LACE Index Scoring Tool for Risk Assessment of Hospital Readmission

Step 1. Length of Stay

Length of stay (including day of admission and discharge): _____ days

Length of stay (days)	Score (circle as appropriate)
1	1
2	2
3	3
4-6	4
7-13	5
14 or more	7



Step 2. Acuity of Admission

Was the patient admitted to hospital via the emergency department?
If yes, enter "3" in Box A, otherwise enter "0" in Box A

A

Step 3. Comorbidities

Condition (definitions and notes on reverse)	Score (circle as appropriate)	If the TOTAL score is between 0 and 3 enter the score into Box C. If the score is 4 or higher, enter 5 into Box C
Previous myocardial infarction	+1	
Cerebrovascular disease	+1	
Peripheral vascular disease	+1	
Diabetes without complications	+1	
Congestive heart failure	+2	
Diabetes with end organ damage	+2	
Chronic pulmonary disease	+2	
Mild liver or renal disease	+2	
Any tumor (including lymphoma or leukemia)	+2	
Dementia	+3	
Connective tissue disease	+3	
AIDS	+4	
Moderate or severe liver or renal disease	+4	
Metastatic solid tumor	+6	
TOTAL		

C

Step 4. Emergency department visits

How many times has the patient visited an emergency department in the six months prior to admission (not including the emergency department visit immediately preceding the current admission)? _____
Enter this number or 4 (whichever is smaller) in Box E

E

Add numbers in Box L, Box A, Box C, Box E to generate LACE score and enter into box below.



Valoración:

Puntuación LACE: 1-19 puntos.

Predice el riesgo de readmisión o muerte a los 30 días del alta.

LACE index. (puntuación)

0 – 4 = Riesgo bajo.

5 – 9 = Riesgo moderado.

≥ 10 = Alto riesgo de readmisión.

LACE ≤ 6 → paciente excluido



3. GDS

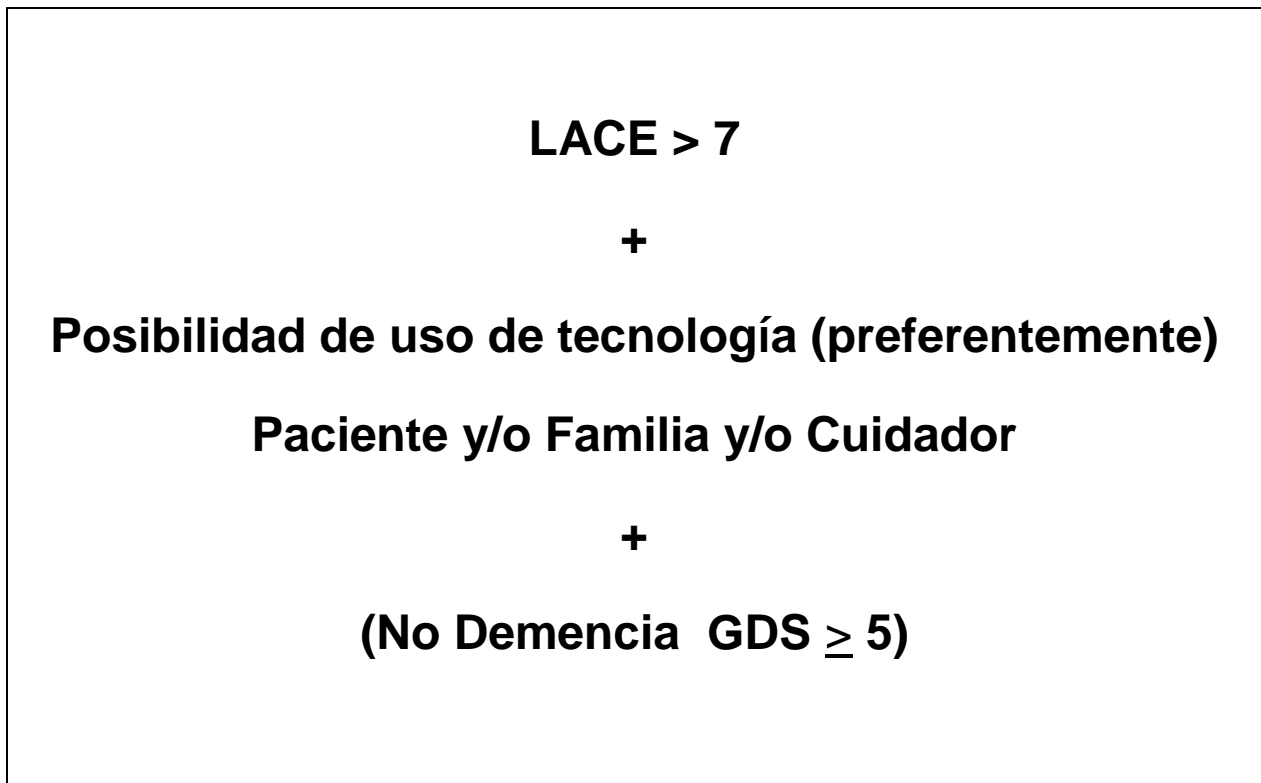
ESCALA DE DETERIORO GLOBAL (GDS-FAST)

Estadio	Fase clínica	Características FAST	Comentarios
GDS 1. Ausencia de déficit cognitivo	Normal MEC: 30-35	Ausencia de déficit funcionales objetivos o subjetivos.	No hay deterioro cognitivo subjetivo ni objetivo
GDS 2. Déficit cognitivo muy leve	Normal para su edad. Olvido MEC: 25-30	Déficit funcional subjetivo	Quejas de pérdida de memoria en ubicación de objetos, nombres de personas, citas, etc. No se objetiva déficit en el examen clínico ni en su medio laboral o situaciones sociales. Hay pleno conocimiento y valoración de la sintomatología.
GDS 3. Déficit cognitivo leve	Deterioro límite MEC: 20-27	Déficit en tareas ocupacionales y sociales complejas y que generalmente lo observan familiares y amigos	Primeros defectos claros. Manifestación en una o más de estas áreas: <ul style="list-style-type: none"> • Haberse perdido en un lugar no familiar • Evidencia de rendimiento laboral pobre • Dificultad para recordar palabras y nombres • tras la lectura retiene escaso material • olvida la ubicación, pierde o coloca erróneamente objetos de valor • escasa capacidad para recordar a personas nuevas que ha conocido El déficit de concentración es evidente para el clínico en una entrevista exhaustiva. La negación como mecanismo de defensa ,o el desconocimiento de los defectos, empieza a manifestarse. Los síntomas se acompañan de ansiedad leve moderada
GDS 4. Déficit cognitivo moderado	Enfermedad de Alzheimer leve MEC: 16-23	Défcits observables en tareas complejas como el control de los aspectos económicos personales o planificación de comidas cuando hay invitados	Defectos manifiestos en: <ul style="list-style-type: none"> • olvido de hechos cotidianos o recientes • déficit en el recuerdo de su historia personal • dificultad de concentración evidente en operaciones de resta de 7 en 7. • incapacidad para planificar viajes, finanzas o actividades complejas Frecuentemente no hay defectos en: <ul style="list-style-type: none"> • orientación en tiempo y persona • reconocimiento de caras y personas familiares • capacidad de viajar a lugares conocidos Labilidad afectiva Mecanismo de negacion domina el cuadro
GDS 5. Déficit cognitivo moderadamente grave	Enfermedad de Alzheimer moderada MEC: 10-19	Decremento de la habilidad en escoger la ropa adecuada en cada estación del año o según las ocasiones	Necesita asistencia en determinadas tareas, no en el aseo ni en la comida, pero si para elegir su ropa Es incapaz de recordar aspectos importantes de su vida cotidiana (dirección, teléfono, nombres de familiares) Es frecuente cierta desorientación en tiempo o en lugar Dificultad para contar en orden inverso desde 40 de 4 en 4, o desde 20 de 2 en 2 Sabe su nombre y generalmente el de su esposa e hijos
GDS 6. Déficit cognitivo grave	Enfermedad de Alzheimer moderadamente grave MEC: 0-12	Decremento en la habilidad para vestirse bañarse y lavarse; específicamente, pueden identificarse 5 subestadios siguientes: a) disminución de la habilidad de vestirse solo b) disminución de la habilidad para bañarse solo c) disminución de la habilidad para lavarse y arreglarse solo d) disminución de la continencia urinaria e)disminución de la continencia fecal	Olvida a veces el nombre de su esposa de quien depende para vivir Retiene algunos datos del pasado Desorientación temporo espacial Dificultad para contar de 10 en 10 en orden inverso o directo Puede necesitar asistencia para actividades de la vida diaria Puede presentar incontinencia Recuerda su nombre y diferencia los familiares de los desconocidos Ritmo diurno frecuentemente alterado Presenta cambios de la personalidad y la afectividad (delirio, síntomas obsesivos, ansiedad, agitación o agresividad y abulia cognoscitiva)
GDS 7. Déficit cognitivo muy grave	Enfermedad de Alzheimer grave MEC: 0	Pérdida del habla y la capacidad motora Se especifican 6 subestadios: a) capacidad de habla limitada aproximadamente a 6 palabras b) capacidad de habla limitada a una única palabra c) pérdida de la capacidad para caminar solo sin ayuda d) pérdida de la capacidad para sentarse y levantarse sin ayuda e) pérdida de la capacidad para sonreír f) pérdida de la capacidad para mantener la cabeza erguida	Pérdida progresiva de todas las capacidades verbales Incontinencia urinaria Necesidad de asistencia a la higiene personal y alimentación Pérdida de funciones psicomotoras como la deambulaci3n Con frecuencia se observan signos neurol3gicos



Valoración: GDS \geq 5: Paciente excluido. GDS < 5: Paciente incluido

Procedimiento de identificación del caso:





EVALUACIÓN DEL

CASO



1. VALORACIÓN DE COMORBILIDAD Y **SITUACION BASAL**



1.1. VALORACIÓN COMORBILIDAD

Test de Charlson

Actor: Médico

Puntuación^a Comorbilidad

1	Infarto de miocardio
	Insuficiencia cardíaca congestiva
	Enfermedad vascular periférica
	Enfermedad cerebrovascular
	Demencia
	Enfermedad respiratoria crónica
	Enfermedad del tejido conectivo
	Úlcus péptico
	Hepatopatía leve
	Diabetes mellitus sin afectación de órganos diana
2	Hemiplejia
	Enfermedad renal moderada-grave
	Diabetes mellitus con afectación de órganos diana
	Cualquier tumor sin metástasis
	Leucemia (aguda o crónica)
3	Linfoma
	Enfermedad hepática moderada o severa
6	Tumor sólido con metástasis
	Sida



Age group	Points
0-49 years	0
50-59 years	1
60-69 years	2
70-79 years	3
80-89 years	4
90-99 years	5

Nota: El scoring cambia en relación a LACE e incluye además ulcus péptico y hemiplegia

Calculadora automática: <http://tools.farmacologiaclinica.info/index.php?sid=37147>

1.2. VALORACION COGNITIVA Y EMOCIONAL

1.2.1. Valoración del deterioro cognitivo

TEST DE PFEIFFER

Actor: Enfermería.



Ítems	ERRORES
¿Qué día es hoy? -día, mes, año-	
¿Qué día de la semana es hoy?	
¿Dónde estamos ahora?	
¿Cuál es su nº de teléfono?	
¿Cuál es su dirección? –preguntar sólo si el paciente no tiene teléfono-	
¿Cuántos años tiene?	
¿Cuál es su fecha de nacimiento? -día, mes, año-	
¿Quién es ahora el presidente del gobierno?	
¿Quién fue el anterior presidente del gobierno?	
¿Cuáles son los dos apellidos de su madre?	
Vaya restando de 3 en 3 al número 20 hasta llegar al 0.	
PUNTUACIÓN TOTAL	

Cuestionario de 10 ítems.

Valoración: El punto de corte está en 3 o más errores, en el caso de personas que al menos sepan leer y escribir y de 4 o más para los que no. A partir de esa puntuación existe la sospecha de deterioro cognitivo.



1.2.2 . Valoración emocional

HAD test (AUTOTEST).

Actor: lo entrega enfermería

Los médicos conocen la importancia de los factores emocionales en la mayoría de enfermedades. Si el médico sabe cual es el estado emocional del paciente puede prestarle entonces mejor ayuda.

Este cuestionario ha sido confeccionado para ayudar a que su médico sepa cómo se siente usted afectiva y emocionalmente. No es preciso que preste atención a los números que aparecen a la izquierda. Lea cada pregunta y subraye la respuesta que usted considere que coincide con su propio estado emocional en la última semana.

No es necesario que piense mucho tiempo cada respuesta: en este cuestionario las respuestas espontáneas tiene más valor que las que se piensan mucho.

A.1. Me siento tenso/a o nervioso/a:

- 3. Casi todo el día
- 2. Gran parte del día
- 1. De vez en cuando
- 0. Nunca

D.1. Sigo disfrutando de las cosas como siempre:

- 0. Ciertamente, igual que antes
- 1. No tanto como antes
- 2. Solamente un poco
- 3. Ya no disfruto con nada

A.2. Siento una especie de temor como si algo malo fuera a suceder:

- 3. Sí, y muy intenso
- 2. Sí, pero no muy intenso
- 1. Sí, pero no me preocupa
- 0. No siento nada de eso

D.2. Soy capaz de reírme y ver el lado gracioso de las cosas:

- 0. Igual que siempre
- 1. Actualmente, algo menos
- 2. Actualmente, mucho menos
- 3. Actualmente, en absoluto

A.3. Tengo la cabeza llena de preocupaciones:

- 3. Casi todo el día
- 2. Gran parte del día
- 1. De vez en cuando
- 0. Nunca

D.3. Me siento alegre:

- 3. Nunca
- 2. Muy pocas veces
- 1. En algunas ocasiones
- 0. Gran parte del día



<p>A.4. Soy capaz de permanecer sentado/a tranquilo/a y relajado/a:</p> <ul style="list-style-type: none">0. Siempre1. A menudo2. Raras veces3. Nunca
<p>D.4. Me siento lento/a y torpe:</p> <ul style="list-style-type: none">3. Gran parte del día2. A menudo1. A veces0. Nunca
<p>A.5. Experimento una desagradable sensación de "nervios y hormigueos" en el estómago:</p> <ul style="list-style-type: none">0. Nunca1. Sólo en algunas ocasiones2. A menudo3. Muy a menudo
<p>D.5. He perdido el interés por mi aspecto personal:</p> <ul style="list-style-type: none">3. Completamente2. No me cuido como debería hacerlo1. Es posible que no me cuido como debiera0. Me cuido como siempre lo he hecho
<p>A.6. Me siento inquieto/a como si no pudiera parar de moverme:</p> <ul style="list-style-type: none">3. Realmente mucho2. Bastante1. No mucho0. Nunca
<p>D.6. Espero las cosas con ilusión:</p> <ul style="list-style-type: none">0. Como siempre1. Algo menos que antes2. Mucho menos que antes3. En absoluto
<p>A.7. Experimento de repente sensaciones de gran angustia o temor:</p> <ul style="list-style-type: none">3. Muy a menudo2. Con cierta frecuencia1. Raramente0. Nunca
<p>D.7. Soy capaz de disfrutar con un buen libro o con un buen programa de radio o televisión:</p> <ul style="list-style-type: none">0. A menudo1. Algunas veces2. Pocas veces3. Casi nunca



HAD: Hospital Anxiety and Depression test

Valoración: se considera que entre 0 y 7 no indica caso, entre 8 y 10 sería un caso dudoso y las puntuaciones superiores a 11 son, probablemente, casos en cada una de las subescalas.

1.3. VALORACIÓN DEL ESTADO FUNCIONAL

Test de Barthel

Actor: Enfermería



Comer

10	Independiente	Capaz de utilizar cualquier instrumento necesario, capaz de desmenuzar la comida, extender la mantequilla, usar condimentos, etc, por sí solo. Come en un tiempo razonable. La comida puede ser cocinada y servida por otra persona
5	Necesita ayuda	Para cortar la carne o el pan, extender la mantequilla, etc, pero es capaz de comer solo
0	Dependiente	Necesita ser alimentado por otra persona

Lavarse – bañarse –

5	Independiente	Capaz de lavarse entero, puede ser usando la ducha, la bañera o permaneciendo de pie y aplicando la esponja sobre todo el cuerpo. Incluye entrar y salir del baño. Puede realizarlo todo sin estar una persona presente
0	Dependiente	Necesita alguna ayuda o supervisión

Vestirse

10	Independiente	Capaz de poner y quitarse la ropa, atarse los zapatos, abrocharse los botones y colocarse otros complementos que precisa (por ejemplo braguero, corsé, etc) sin ayuda)
5	Necesita ayuda	Pero realiza solo al menos la mitad de las tareas en un tiempo razonable
0	Dependiente	

Arreglarse

5	Independiente	Realiza todas las actividades personales sin ninguna ayuda. Incluye lavarse cara y manos, peinarse, maquillarse, afeitarse y lavarse los dientes. Los complementos necesarios para ello pueden ser provistos por otra persona
0	Dependiente	Necesita alguna ayuda

Deposición

10	Continente	Ningún episodio de incontinencia. Si necesita enema o supositorios es capaz de administrárselos por sí solo
5	Accidente ocasional	Menos de una vez por semana o necesita ayuda para enemas o supositorios
0	Incontinente	Incluye administración de enemas o supositorios por otro



Micción - valorar la situación en la semana previa –

10	Continente	Ningún episodio de incontinencia (seco día y noche). Capaz de usar cualquier dispositivo. En paciente sondado, incluye poder cambiar la bolsa solo
5	Accidente ocasional	Menos de una vez por semana o necesita ayuda para enemas o supositorios
0	Incontinente	Incluye pacientes con sonda incapaces de manejarse

Ir al retrete

10	Independiente	Entra y sale solo. Capaz de quitarse y ponerse la ropa, limpiarse, prevenir el manchado de la ropa y tirar de la cadena. Capaz de sentarse y levantarse de la taza sin ayuda (puede utilizar barras para soportarse). Si usa bacinilla (orinal, botella, etc) es capaz de utilizarla y vaciarla completamente sin ayuda y sin manchar
5	Necesita ayuda	Capaz de manejarse con pequeña ayuda en el equilibrio, quitarse y ponerse la ropa, pero puede limpiarse solo. Aún es capaz de utilizar el retrete.
0	Dependiente	Incapaz de manejarse sin asistencia mayor

Trasladarse sillón / cama

15	Independiente.	Sin ayuda en todas las fases. Si utiliza silla de ruedas se aproxima a la cama, frena, desplaza el apoya pies, cierra la silla, se coloca en posición de sentado en un lado de la cama, se mete y tumba, y puede volver a la silla sin ayuda
10	Mínima ayuda	Incluye supervisión verbal o pequeña ayuda física, tal como la ofrecida por una persona no muy fuerte o sin entrenamiento
5	Gran ayuda	Capaz de estar sentado sin ayuda, pero necesita mucha asistencia (persona fuerte o entrenada) para salir / entrar de la cama o desplazarse
0	Dependiente	Necesita grúa o completo alzamiento por dos persona. Incapaz de permanecer sentado

Deambulación

15	Independiente	Puede caminar al menos 50 metros o su equivalente en casa sin ayuda o supervisión. La velocidad no es importante. Puede usar cualquier ayuda (bastones, muletas, etc...) excepto andador. Si utiliza prótesis es capaz de ponérselo y quitársela sólo
10	Necesita ayuda	supervisión o pequeña ayuda física (persona no muy fuerte) para andar 50 metros. Incluye instrumentos o ayudas para permanecer de pie (andador)
5	Independiente en silla de ruedas	En 50metros. Debe ser capaz de desplazarse, atravesar puertas y doblar esquinas solo
0	Dependiente	Si utiliza silla de ruedas, precisa ser empujado por otro

Subir y bajar escaleras

10	Independiente	Capaz de subir y bajar un piso sin ayuda ni supervisión. Puede utilizar el apoyo que precisa para andar (bastón, muletas, etc) y el pasamanos
5	Necesita ayuda	Supervisión física o verbal
0	Dependiente	Incapaz de salvar escalones. Necesita alzamiento (ascensor)

Valoración: El rango de posibles valores del índice de Barthel está entre 0 y 100, con intervalos de 5 puntos. A menor puntuación, más dependencia; y a mayor puntuación, más independencia. Además, el Índice Barthel puede usarse asignando puntuaciones con intervalos de 1 punto entre las categorías – las posibles puntuaciones para las actividades son 0, 1, 2, o 3 puntos – resultando un rango global entre 0 y 20. Los puntos de corte sugeridos por algunos autores para facilitar la interpretación son:



- 0-20 dependencia total.
- 21-60 dependencia severa.
- 61-90 dependencia moderada.
- 91-99 dependencia escasa.
- 100 independencia.



2. VALORACIÓN DE CLÍNICA



Procedimientos a realizar por enfermería:

Variables antropométricas: Peso en Kg e IMC en Kg/m²

Procedimientos a realizar por el médico

Hábitos:

- Tabaquismo o exabaquismo (factor de exposición en dosis acumulada paquetes-año)
- ingesta de sal.: (sí o no)

A/ Pacientes con EPOC o EPOC predominante.

1/ Escala mMRC de disnea

Escala de disnea modificada del MRC (mMRC)

Grado	Actividad
0	Ausencia de disnea al realizar ejercicio intenso
1	Disnea al andar de prisa en llano, o al andar subiendo una pendiente poco pronunciada
2	La disnea le produce una incapacidad de mantener el paso de otras personas de la misma edad caminando en llano o tener que parar a descansar al andar en llano a su propio paso
3	La disnea hace que tenga que parar a descansar al andar unos 100 m o pocos minutos después de andar en llano
4	La disnea le impide al paciente salir de casa o aparece con actividades como vestirse o desvestirse

2/ Datos espirométricos



FEV1/FVC posbroncodilatador (debe ser < 0.7)

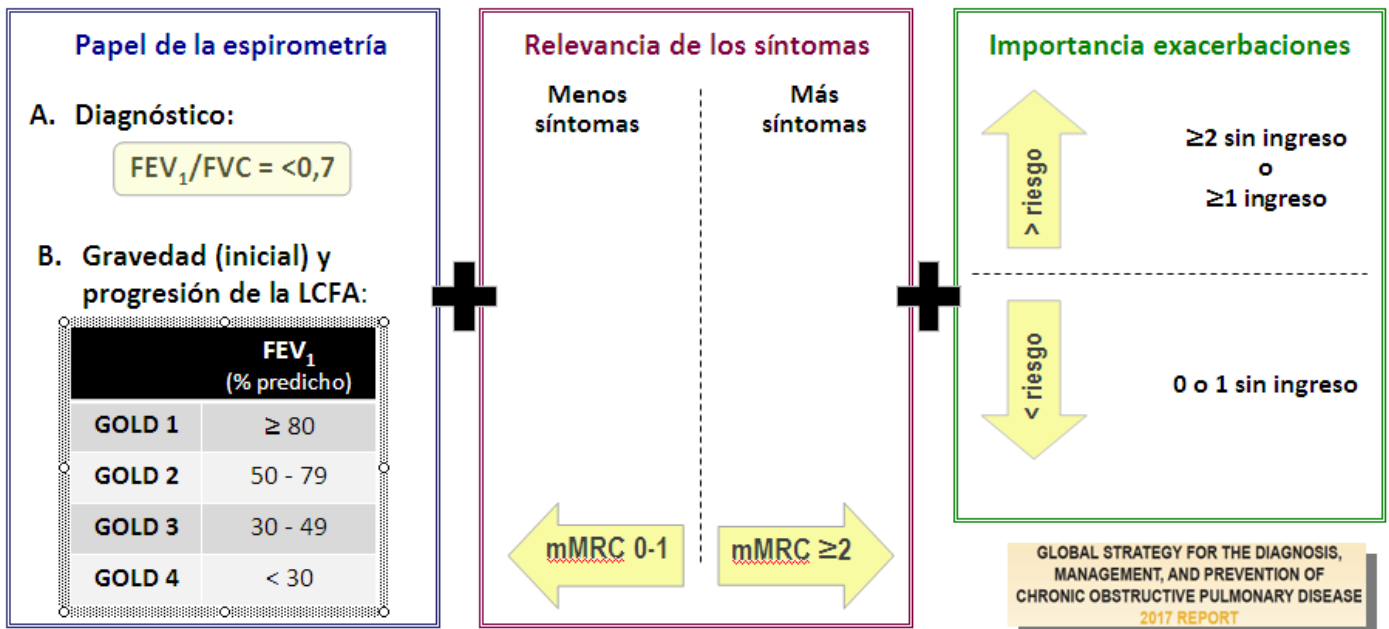
FEV1 posbroncodilatador (% del valor de referencia)

3/ Exacerbaciones: que supongan ingreso hospitalario o consulta a UCIA de Hospital o de Atención primaria en el último año. (Registrar número)

Escalas para EPOC construidas con datos proporcionados por el médico:

a/ GOLD 2017:

1. Presencia y gravedad de la alteración espirométrica (limitación crónica al flujo aéreo – LCFA).(Valores SIEMPRE posbroncodilatador)
2. Magnitud de los síntomas del paciente.
3. Antecedentes y riesgo de exacerbaciones.





Papel de la espirometría

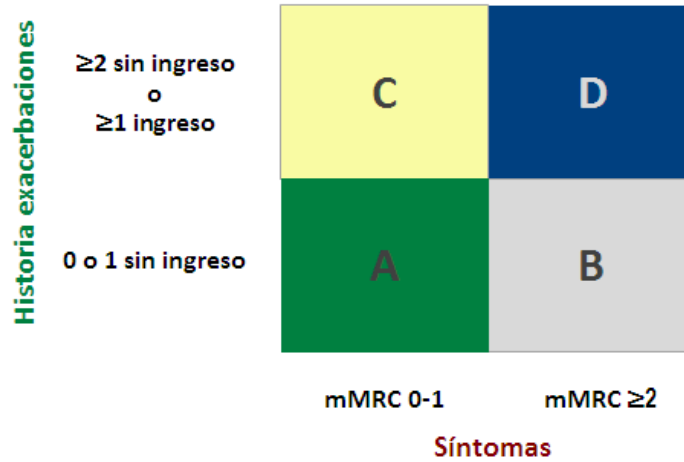
A. Diagnóstico:

$FEV_1/FVC = <0,7$

B. Gravedad (inicial) y progresión de la LCFA:

	FEV₁ (% predicho)
GOLD 1	≥ 80
GOLD 2	50 - 79
GOLD 3	30 - 49
GOLD 4	< 30

Evaluación de los síntomas / riesgo de exacerbación



b/ CODEX

- Comorbilidad: Índice de Charlson corregido para edad.
- Obstrucción: FEV1. (% del valor de referencia)
- Disnea: mMRC. (grado)
- Exacerbaciones que supongan ingreso o consulta a urgencias hospitalarias o de atención primaria en el último año.

Puntos Codex				
	0	1	2	3
Variables				
Índice de Charlson	0-4	5-7	≥ 8	
FEV1%	≥ 65	50-64	36-49	≤ 35
Disnea (mMRC)	0-1	2	3	4
Exacerbaciones	0	1-2	≥ 3	



c/ Test tabaquismo. (Sólo para enfermos con tabaquismo activo):

1. ¿Está usted dispuesto a dejar de fumar? Si / No

2. ¿Dejaría el tratamiento por alguno de estos motivos?

- Costes del tratamiento: Si / No.
- Imposibilidad para el desplazamiento o no disponibilidad de consulta antitabaco cercana: Si / No.

Valoración:

Si la respuesta a 1 es NO: Motivar para dejar de fumar.

Si la respuesta a 1 y 2 es SI: gestionar tratamiento subvencionado.

Si la respuesta a 1 es SI y a 2 es NO: programar a consulta de tabaquismo.

B/ Pacientes con insuficiencia cardíaca o insuficiencia cardíaca predominante

Clase funcional NYHA de insuficiencia cardíaca:

Tabla 1. Clasificación funcional de la insuficiencia cardíaca según la NYHA

Clase I	Sin limitación para realizar actividad física. No hay síntomas.
Clase II	Ligera limitación de la actividad física. La actividad ordinaria ocasiona fatiga, palpitaciones, disnea o dolor anginoso.
Clase III	Marcada limitación de la actividad física. Actividad física menor que la ordinaria ocasiona fatiga, palpitaciones, disnea o dolor anginoso.
Clase IV	Incapacidad para llevar a cabo cualquier actividad física. Los síntomas de insuficiencia cardíaca o de síndrome anginoso pueden estar presentes incluso en reposo.



3. VALORACION DE BARRERAS



3. 1. Adherencia/ Tratamiento

3. 2. Social

3. 1. Adherencia/ Tratamiento

Autor: Enfermería

- Cumplimiento.

1/ Bueno: Se constata retirada de más del 80% de la medicación de la oficina de Farmacia.

2/ Malo: No se constata retirada de más del 80% de la medicación de la oficina de Farmacia.

- Complejidad/ Habilidad para ejecutarlo:

1–Toma más de 4 comprimidos al día.

2–El tratamiento es difícil de preparar.

3–Difícil de ejecutar o el paciente no es capaz de hacerlo bien.

(la técnica de inhalación deficiente está incluida en esta categoría).

Valoración: 1 o más ítems positivos determinan el tratamiento como complejo.

3. 2. Social

Autor: Enfermería



Valoración Global: la Identificación como factor negativo en cualquiera de las áreas será indicación de una valoración más profunda por la asistente social de nuestro centro.

- Vivienda.

La situación de la vivienda se valora como un factor que puede impactar en la evolución del paciente de forma negativa si se identifica alguna de las siguientes situaciones:

- 1/ Acceso difícil (No dispone de ascensor, vive en un edificio y el paciente tiene un mal estado funcional basal).
- 2/ Insalubre o valorada como inadecuada previamente por los servicios sociales.

- Autocuidado/ Soporte familiar/ Cuidador.

La autocura o el soporte familiar son valorados como factores que pueden impactar negativamente en la evolución del paciente si se da alguna de las siguientes situaciones:

- 1/ Baja capacidad de autocura reportada por servicios sociales o puntuación desfavorable en test de autocura*.
- 2/ Cuidador claudicado o inadecuado (reportado por servicios sociales o profesionales sanitarios (médico o enfermera).

*Test de Autocuidado:

- 1/ Paciente con insuficiencia cardiaca:

Autor: Autotest que da enfermería



Esta escala contiene valora el nivel de autocuidado en insuficiencia cardiaca.

Responda con sinceridad a las siguientes afirmaciones.

- Haga un círculo en el número 1 si está completamente de acuerdo con la afirmación (es decir, si hace siempre lo que se comenta).
- Haga un círculo en el número 5 si está completamente en desacuerdo con la afirmación (es decir, si no hace nunca lo que se comenta).
- Haga un círculo en los números 2 a 4 para respuestas intermedias.

Aunque no esté seguro por completo de alguna cuestión, marque la respuesta que crea más ajustada a su situación.

	Completamente de acuerdo / Siempre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Completamente en desacuerdo / Nunca
1.- Me peso cada día.	1	2	3	4	5
2.- Si siento ahogo (disnea) me paro y descanso.	1	2	3	4	5
3.- Si mi dificultad respiratoria (disnea) aumenta, contacto con mi médico o enfermera.	1	2	3	4	5
4.- Si mis pies/piernas comienzan a hincharse más de lo habitual, contacto con mi médico o enfermera.	1	2	3	4	5
5.- Si aumento 2 kilos en una semana, contacto con mi médico o enfermera.	1	2	3	4	5
6.- Limito la cantidad de líquidos que bebo (a menos de 1,5 ó 2 litros diarios).	1	2	3	4	5
7.- Reposo un rato durante el día.	1	2	3	4	5
8.- Si noto aumento de fatiga (cansancio), contacto con mi médico o enfermera.	1	2	3	4	5
9.- Realizo una dieta baja en sal.	1	2	3	4	5
10.- Tomo la medicación como me han dicho.	1	2	3	4	5
11.- Me vacuno contra la gripe todos los años.	1	2	3	4	5
12.- Hago ejercicio regularmente	1	2	3	4	5

De acuerdo

Indeciso.

En desacuerdo

Valoración: 12 puntos: (mejor autocuidado).



60 puntos (peor autocuidado).

Puntuaciones bajas (< 24 puntos) indican un buen autocuidado

2/ Paciente con EPOC

Autor: Autotest que entrega enfermería.

AFIRMACIÓN	Completamente de acuerdo / Siempre (1p)	De acuerdo (2p)	Indeciso (3p)	Desacuerdo (4p)	Completamente en desacuerdo / Nunca (5p)
Si tengo dificultad para respirar paro y descanso.					
Si mi dificultad para respirar va en aumento contacto con mi doctor o enfermera.					
Si mi tos y espectoración aumentan y/o la mucosidad se vuelve fea contacto con mi doctor o enfermera.					



Descanso un rato durante el día.					
Si experimento aumento de la fatiga (cansancio) contacto con mi doctor o enfermera.					
Tomo toda la medicación como me han dicho.					
Me vacuno contra la gripe todos los años.					
Hago ejercicio de manera regular.					

Valoración: 8 puntos: (mejor autocuidado).

40 puntos (peor autocuidado).

Puntuaciones bajas (< 16 puntos) indican un buen autocuidado.



DEFINICIÓN DEL PLAN DE TRABAJO



1/ Autotest pacientes con EPOC.

Autor: Autotest para paciente

	Más o menos igual que siempre.	Más que días atrás
Me ahogo		
	Más o menos igual que siempre.	Peor que días atrás
He dormido		
	Más o menos igual que siempre.	Francamente peor que días atrás
Me Siento		
En EPOC (además)		
	Más o menos igual que siempre.	Más que días atrás
Arranco mucosidad		
	Tengo más o menos igual que siempre.	Están peor que días atrás
La tos o los pitos		



Responda con una cruz en la casilla correspondiente, según los síntomas que presente, si se mantienen igual o han empeorado.

Valoración Score: EPOC: (5 ítems) \geq 2: (alarma)

2/ Autotest pacientes con Insuficiencia cardiaca.

	Más o menos igual que siempre.	Más que en días anteriores.
Me ahogo		
	Más o menos igual que siempre.	Peor que en días anteriores.
He dormido		
	Más o menos igual que siempre.	Más cargado o hinchado que en días anteriores.
Me Siento		
En Insuficiencia cardiaca (además).		
	Más o menos igual que siempre.	Menos que en días anteriores
Orino		
	Más o menos igual que siempre.	Más hinchados que en días Anteriores.



<p>Tengo los pies</p>		
---------------------------	--	--

Responda con una cruz en la casilla correspondiente, según los síntomas que presente, si se mantienen igual o han empeorado.

Valoración Score: Insuficiencia cardiaca: (5 items) ≥ 2 : (alarma).



CONNECARE

User Document	
Working Team Meeting Report	
Case Study: 2	Site: Lleida
Cycle: 1st	Date: 29/3/2017

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
<input checked="" type="checkbox"/> CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 3-4-2017



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Project Number	689802	Acronym	CONNECARE
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Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 1 - Lleida – 1 st cycle – 24/1/2017

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Jordi de Battle / Eloisa Vargiu	Email	eloisa.vargiu@eurecat.org
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Abstract	This document reports on the meeting held in Lleida on March 29 th , 2017 with the working team with clinicians for the Hospital of Santa Maria and the Hospital Arnau i Vilanova en Lleida.
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1. Executive Summary

1.1 Objectives

Being the last meeting of the 1st PDSA cycle, the objective of this working team meeting was triplex: (i) to provide a summary of the work done during this first cycle updating open issues from the previous meetings; (ii) to present the current version of the workflow according to requirements and feedback received in the previous meetings; and (iii) to compile the evaluation form corresponding to the 1st PDSA cycle.

The meeting was participated by clinicians from Hospital Santa Maria, Hospital Arnau de Vilanova and Primary care of the Health Care area of Lleida. Each clinician received a manual with the description of the case study¹.

1.2 Results

The main result of the meeting was resuming, putting in common and agreeing the work done during the 1st PDSA cycle in order to give it as input for the next cycle. Results from this cycle will be used from the technical partners to starting the implementation of the SACM and its user interface (WP3) and of the SMS and its user interface (WP4). In fact, after the meeting, IRBLL and EURECAT reviewed the current version of the mock-ups of both SACM and SMS. Feedback from clinicians has been shared with the corresponding technical partners.

¹ The manual (in Spanish) is given in the Appendix at the end of this document.

2. Methods

2.1 Participants

3. Name and Surname	Role	Affiliation
Francisca Guiralt	Quality department	Hospital de Santa María
Araceli Fuentes	Primary care physician	Hospital de Santa María
Eloisa Vargiu	Technician	Eurecat
Gerard Torres	Internal medicine physician	Hospital de Santa María
Jordi Colomina	Orthopedics surgeon	Hospital de Santa María
Jordi de Batlle	Epidemiologist	IRBLleida
Josep Maria Martinez	Case Manager	Hospital de Santa María
Juan Manuel Fernández	Technician	Eurecat
Felip Miralles	Scientific coordinator of CONNECARE	Eurecat
Maria Aguilà	Nurse	Hospital de Santa María
Miquel Mesas	Computer department	Hospital de Santa María
Oscar Sacristan	Internal medicine physician	Hospital de Santa María
Reis Drudis	Anesthesiologist	Hospital de Santa María

3.1 Collected Data

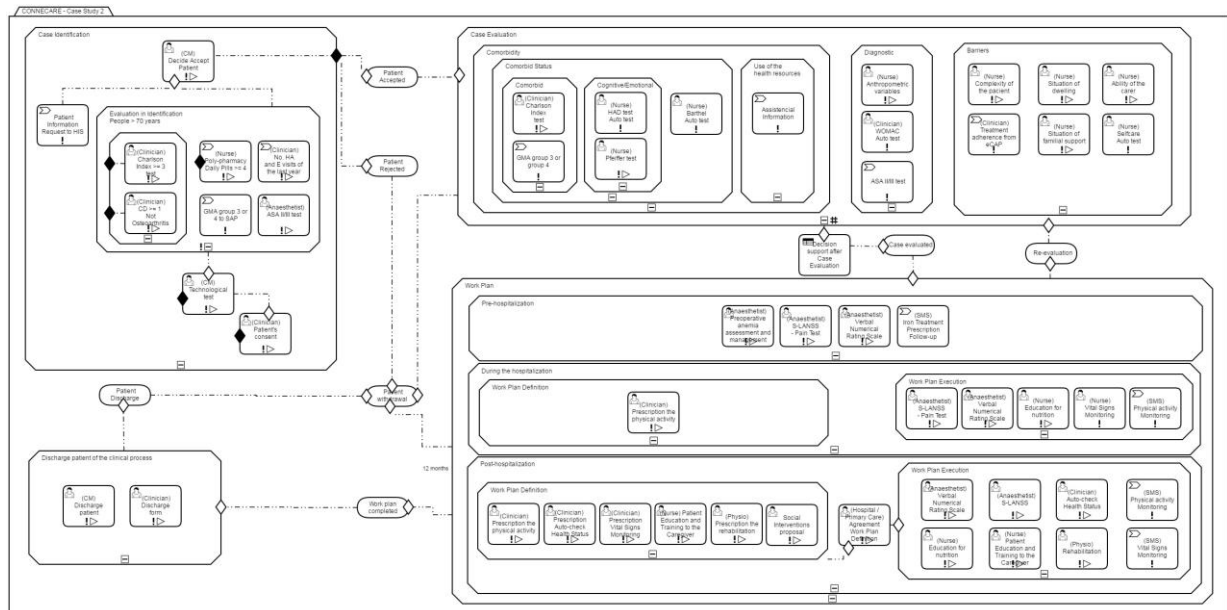
Questionnaires in which actions were required from the previous meeting have been reviewed to reach a final agreement:

- Technological skills;
- Pain evaluation: numeric scale and S-LASS;
- Self-care (during hospitalization);
- Self-check questionnaire (first days after hospitalization).



The full list of interventions pre-, during-, and post-hospitalization has been reviewed and an agreement reached. Particular relevance has been put in the pre-hospitalization phase since it was not addressed in the previous meetings.

The last version of the CMMN diagram has been presented by EURECAT and some changes have been required by clinicians to better fit with the changes from the previous meetings (and in particular to take into account the pre-hospitalization phase). The updated diagram is depicted in Figure:



At the end of the meeting, participants have been asked to anonymously fill the evaluation form corresponding to the 1st PDSA cycle. The filled forms have been collected and results put in the RedCap.

3.2 Organizational Aspects

Miquel Mesas from the Computer Department of the Hospital Santa Maria proposed a solution to extract data from the SAP (number of prior hospitalizations and emergency room visits, hospital and primary care the last year before surgery). This temporary solution will be adopted for the StudyRelease expected on M18 (September 2017) and removed once the full integration of the CONNECARE system will be available.



4. Next Steps

A new meeting has been scheduled on May 30th, 2017 and will be part of the 2nd PDSA cycle of the project. Results from that meeting will be reported in the GA meeting on June 26th, 27th in London.



Appendix: Manual of the CS1 in Lleida

Manual de procedimientos.

Use Case 2: El enfermo crónico ante la cirugía Traumatológica.

CONNECARE. LLEIDA.

Hospital Universitario de Santa Maria.

Hospital Universitario Arnau de Vilanova.



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 - 2.1 Procedimientos a realizar por enfermería.
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 - 2.2.2. Clasificación de ASA.
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 - 3.1 Adherencia/ Tratamiento.
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 - *Complejidad/ Habilidad para ejecutarlo.*
 - 3.2 Social
 - *Vivienda.*
 - *Autocura/ Soporte familiar/ Cuidador.*

Test de Autocura para el paciente de cirugía traumatológica.



- **Definición del plan de trabajo:**

1. Autotest para pacientes dados de alta de cirugía traumatólogica.
2. Escalas de dolor (Autotest).



IDENTIFICACIÓN

DEL CASO



1. Cribaje tecnológico

Actor: Gestor de casos

- Usted o su cuidador tienen conexión a internet?
 - NO
 - SI:
 - Usted utiliza:
 - Teléfono móvil (no solo para llamar).
 - Tablet.
 - Ordenador personal.
 - Ninguno.
 - Su cuidador principal utiliza:
 - Teléfono móvil (no solo para llamar).
 - Tablet.
 - Ordenador personal.
 - Ninguno.

Valoración:

* Cualquier respuesta excepto “ninguno” supone que el paciente es apto.

Si no es apto no debe progresar el proceso de identificación.



2. Test de Charlson

Actor: Médico Anestesiata.

Puntuación^a Comorbilidad

1	Infarto de miocardio
	Insuficiencia cardíaca congestiva
	Enfermedad vascular periférica
	Enfermedad cerebrovascular
	Demencia
	Enfermedad respiratoria crónica
	Enfermedad del tejido conectivo
	Úlcus péptico
	Hepatopatía leve
	Diabetes mellitus sin afectación de órganos diana
2	Hemiplejia
	Enfermedad renal moderada-grave
	Diabetes mellitus con afectación de órganos diana
	Cualquier tumor sin metástasis
	Leucemia (aguda o crónica)
3	Linfoma
	Enfermedad hepática moderada o severa
6	Tumor sólido con metástasis
	Sida

Age group	Points
0-49 years	0
50-59 years	1
60-69 years	2
70-79 years	3
80-89 years	4
90-99 years	5



Calculadora automática: <http://tools.farmacologiaclinica.info/index.php?sid=37147>

3. Clasificación ASA

Actor: Médico (Anestesiista-Traumatólogo).

SISTEMA DE CLASIFICACIÓN ASA

Sistema de clasificación que utiliza la American Society of Anesthesiologists (ASA) para estimar el riesgo que plantea la anestesia para los distintos estados del paciente.

Clase I	Paciente saludable no sometido a cirugía electiva
Clase II	Paciente con enfermedad sistémica leve, controlada y no incapacitante. Puede o no relacionarse con la causa de la intervención.
Clase III	Paciente con enfermedad sistémica grave, pero no incapacitante. Por ejemplo: cardiopatía severa o descompensada, diabetes mellitus no compensada acompañada de alteraciones orgánicas vasculares sistémicas (micro y macroangiopatía diabética), insuficiencia respiratoria de moderada a severa, angor pectoris, infarto al miocardio antiguo, etc.
Clase IV	Paciente con enfermedad sistémica grave e incapacitante, que constituye además amenaza constante para la vida, y que no siempre se puede corregir por medio de la cirugía. Por ejemplo: insuficiencias cardíaca, respiratoria y renal severas (descompensadas), angina persistente, miocarditis activa, diabetes mellitus descompensada con complicaciones severas en otros órganos, etc.
Clase V	Se trata del enfermo terminal o moribundo, cuya expectativa de vida no se espera sea mayor de 24 horas, con o sin tratamiento quirúrgico. Por ejemplo: ruptura de aneurisma aórtico con choque hipovolémico severo, traumatismo craneoencefálico con edema cerebral severo, embolismo pulmonar masivo, etc. La mayoría de estos pacientes requieren la cirugía como medida heroica con anestesia muy superficial.



4. Procedimiento de identificación del caso

Actor: Médico traumatólogo.

1. Edad > 70 años.
2. Charlson index con puntuación > 3 o, alternativamente, padecen una o más enfermedades crónicas (no artrosis).
3. Polifarmacia que implica la necesidad de tomar 4 o más comprimidos por día.
4. Hospitalizaciones no programadas y visitas a urgencias durante el último año.
5. ASA II/ III.
6. Posibilidad de uso de la tecnología (paciente y/o familia y/o cuidador) a ser posible.

Valoración: Apto si cumple todos estos criterios



EVALUACIÓN DEL CASO



1. VALORACIÓN DE COMORBILIDAD Y **SITUACION BASAL**



1.1. VALORACIÓN COMORBILIDAD

Test de Charlson

Actor: Médico Anestesiista.

Puntuación^a Comorbilidad

1	Infarto de miocardio
	Insuficiencia cardíaca congestiva
	Enfermedad vascular periférica
	Enfermedad cerebrovascular
	Demencia
	Enfermedad respiratoria crónica
	Enfermedad del tejido conectivo
	Úlcus péptico
	Hepatopatía leve
	Diabetes mellitus sin afectación de órganos diana
	Hemiplejía
2	Enfermedad renal moderada-grave
	Diabetes mellitus con afectación de órganos diana
	Cualquier tumor sin metástasis
	Leucemia (aguda o crónica)
	Linfoma
3	Enfermedad hepática moderada o severa
6	Tumor sólido con metástasis
	Sida

Age group	Points
0-49 years	0
50-59 years	1
60-69 years	2
70-79 years	3
80-89 years	4
90-99 years	5

NOTA: Si se ha ejecutado previamente, en identificación del caso, solo cabe poner el mismo valor

Calculadora automática: <http://tools.farmacologiaclinica.info/index.php?sid=37147>



1.2. VALORACION COGNITIVA Y EMOCIONAL

1.2.1. Valoración del deterioro cognitivo

TEST DE PFEIFFER

Actor: Enfermería.

Ítems	ERRORES
¿Qué día es hoy? -día, mes, año-	
¿Qué día de la semana es hoy?	
¿Dónde estamos ahora?	
¿Cuál es su nº de teléfono?	
¿Cuál es su dirección? –preguntar sólo si el paciente no tiene teléfono-	
¿Cuántos años tiene?	
¿Cuál es su fecha de nacimiento? -día, mes, año-	
¿Quién es ahora el presidente del gobierno?	
¿Quién fue el anterior presidente del gobierno?	
¿Cuáles son los dos apellidos de su madre?	
Vaya restando de 3 en 3 al número 20 hasta llegar al 0.	
PUNTUACIÓN TOTAL	

Cuestionario de 10 ítems.

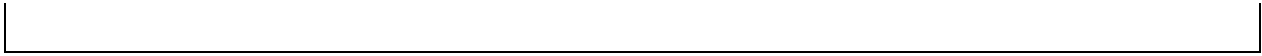
Valoración: El punto de corte está en 3 o más errores, en el caso de personas que al menos sepan leer y escribir y de 4 o más para los que no. A partir de esa puntuación existe la sospecha de deterioro cognitivo.



CONNECARE

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WORKING TEAM REPORT

Case Study 2 - Lleida – 1st Cycle – 29/3/2017





1.2.2 . Valoración emocional

HAD test (AUTOTEST).

Actor: lo entrega enfermería

Los médicos conocen la importancia de los factores emocionales en la mayoría de enfermedades. Si el médico sabe cual es el estado emocional del paciente puede prestarle entonces mejor ayuda.

Este cuestionario ha sido confeccionado para ayudar a que su médico sepa cómo se siente usted afectiva y emocionalmente. No es preciso que preste atención a los números que aparecen a la izquierda. Lea cada pregunta y subraye la respuesta que usted considere que coincide con su propio estado emocional en la última semana.

No es necesario que piense mucho tiempo cada respuesta: en este cuestionario las respuestas espontáneas tiene más valor que las que se piensan mucho.

A.1. Me siento tenso/a o nervioso/a:

- 3. Casi todo el día
- 2. Gran parte del día
- 1. De vez en cuando
- 0. Nunca

D.1. Sigo disfrutando de las cosas como siempre:

- 0. Ciertamente, igual que antes
- 1. No tanto como antes
- 2. Solamente un poco
- 3. Ya no disfruto con nada

A.2. Siento una especie de temor como si algo malo fuera a suceder:

- 3. Sí, y muy intenso
- 2. Sí, pero no muy intenso
- 1. Sí, pero no me preocupa
- 0. No siento nada de eso

D.2. Soy capaz de reírme y ver el lado gracioso de las cosas:

- 0. Igual que siempre
- 1. Actualmente, algo menos
- 2. Actualmente, mucho menos
- 3. Actualmente, en absoluto

A.3. Tengo la cabeza llena de preocupaciones:

- 3. Casi todo el día
- 2. Gran parte del día
- 1. De vez en cuando
- 0. Nunca

D.3. Me siento alegre:

- 3. Nunca
- 2. Muy pocas veces
- 1. En algunas ocasiones
- 0. Gran parte del día



<p>A.4. Soy capaz de permanecer sentado/a tranquilo/a y relajado/a:</p> <ul style="list-style-type: none">0. Siempre1. A menudo2. Raras veces3. Nunca
<p>D.4. Me siento lento/a y torpe:</p> <ul style="list-style-type: none">3. Gran parte del día2. A menudo1. A veces0. Nunca
<p>A.5. Experimento una desagradable sensación de "nervios y hormigueos" en el estómago:</p> <ul style="list-style-type: none">0. Nunca1. Sólo en algunas ocasiones2. A menudo3. Muy a menudo
<p>D.5. He perdido el interés por mi aspecto personal:</p> <ul style="list-style-type: none">3. Completamente2. No me cuido como debería hacerlo1. Es posible que no me cuido como debiera0. Me cuido como siempre lo he hecho
<p>A.6. Me siento inquieto/a como si no pudiera parar de moverme:</p> <ul style="list-style-type: none">3. Realmente mucho2. Bastante1. No mucho0. Nunca
<p>D.6. Espero las cosas con ilusión:</p> <ul style="list-style-type: none">0. Como siempre1. Algo menos que antes2. Mucho menos que antes3. En absoluto
<p>A.7. Experimento de repente sensaciones de gran angustia o temor:</p> <ul style="list-style-type: none">3. Muy a menudo2. Con cierta frecuencia1. Raramente0. Nunca
<p>D.7. Soy capaz de disfrutar con un buen libro o con un buen programa de radio o televisión:</p> <ul style="list-style-type: none">0. A menudo1. Algunas veces2. Pocas veces3. Casi nunca

Valoración: se considera que entre 0 y 7 no indica caso, entre 8 y 10 sería un caso dudoso y las puntuaciones superiores a 11 son, probablemente, casos en cada una de las subescalas.



1.3. VALORACIÓN DEL ESTADO FUNCIONAL

Test de Barthel

Actor: Enfermería

Comer

10	Independiente	Capaz de utilizar cualquier instrumento necesario, capaz de desmenuzar la comida, extender la mantequilla, usar condimentos, etc, por sí solo. Come en un tiempo razonable. La comida puede ser cocinada y servida por otra persona
5	Necesita ayuda	Para cortar la carne o el pan, extender la mantequilla, etc, pero es capaz de comer solo
0	Dependiente	Necesita ser alimentado por otra persona

Lavarse – bañarse –

5	Independiente	Capaz de lavarse entero, puede ser usando la ducha, la bañera o permaneciendo de pie y aplicando la esponja sobre todo el cuerpo. Incluye entrar y salir del baño. Puede realizarlo todo sin estar una persona presente
0	Dependiente	Necesita alguna ayuda o supervisión

Vestirse

10	Independiente	Capaz de poner y quitarse la ropa, atarse los zapatos, abrocharse los botones y colocarse otros complementos que precisa (por ejemplo braguero, corsé, etc) sin ayuda)
5	Necesita ayuda	Pero realiza solo al menos la mitad de las tareas en un tiempo razonable
0	Dependiente	

Arreglarse

5	Independiente	Realiza todas las actividades personales sin ninguna ayuda. Incluye lavarse cara y manos, peinarse, maquillarse, afeitarse y lavarse los dientes. Los complementos necesarios para ello pueden ser provistos por otra persona
0	Dependiente	Necesita alguna ayuda

Deposición

10	Continente	Ningún episodio de incontinencia. Si necesita enema o supositorios es capaz de administrárselos por sí solo
5	Accidente ocasional	Menos de una vez por semana o necesita ayuda para enemas o supositorios
0	Incontinente	Incluye administración de enemas o supositorios por otro



Micción - valorar la situación en la semana previa –

10	Continente	Ningún episodio de incontinencia (seco día y noche). Capaz de usar cualquier dispositivo. En paciente sondado, incluye poder cambiar la bolsa solo
5	Accidente ocasional	Menos de una vez por semana o necesita ayuda para enemas o supositorios
0	Incontinente	Incluye pacientes con sonda incapaces de manejarse

Ir al retrete

10	Independiente	Entra y sale solo. Capaz de quitarse y ponerse la ropa, limpiarse, prevenir el manchado de la ropa y tirar de la cadena. Capaz de sentarse y levantarse de la taza sin ayuda (puede utilizar barras para soportarse). Si usa bacinilla (orinal, botella, etc) es capaz de utilizarla y vaciarla completamente sin ayuda y sin manchar
5	Necesita ayuda	Capaz de manejarse con pequeña ayuda en el equilibrio, quitarse y ponerse la ropa, pero puede limpiarse solo. Aún es capaz de utilizar el retrete.
0	Dependiente	Incapaz de manejarse sin asistencia mayor

Trasladarse sillón / cama

15	Independiente.	Sin ayuda en todas las fases. Si utiliza silla de ruedas se aproxima a la cama, frena, desplaza el apoya pies, cierra la silla, se coloca en posición de sentado en un lado de la cama, se mete y tumba, y puede volver a la silla sin ayuda
10	Mínima ayuda	Incluye supervisión verbal o pequeña ayuda física, tal como la ofrecida por una persona no muy fuerte o sin entrenamiento
5	Gran ayuda	Capaz de estar sentado sin ayuda, pero necesita mucha asistencia (persona fuerte o entrenada) para salir / entrar de la cama o desplazarse
0	Dependiente	Necesita grúa o completo alzamiento por dos persona. Incapaz de permanecer sentado

Deambulación

15	Independiente	Puede caminar al menos 50 metros o su equivalente en casa sin ayuda o supervisión. La velocidad no es importante. Puede usar cualquier ayuda (bastones, muletas, etc...) excepto andador. Si utiliza prótesis es capaz de ponérselo y quitársela sólo
10	Necesita ayuda	supervisión o pequeña ayuda física (persona no muy fuerte) para andar 50 metros. Incluye instrumentos o ayudas para permanecer de pie (andador)
5	Independiente en silla de ruedas	En 50metros. Debe ser capaz de desplazarse, atravesar puertas y doblar esquinas solo
0	Dependiente	Si utiliza silla de ruedas, precisa ser empujado por otro

Subir y bajar escaleras

10	Independiente	Capaz de subir y bajar un piso sin ayuda ni supervisión. Puede utilizar el apoyo que precisa para andar (bastón, muletas, etc) y el pasamanos
5	Necesita ayuda	Supervisión física o verbal
0	Dependiente	Incapaz de salvar escalones. Necesita alzamiento (ascensor)

Valoración: El rango de posibles valores del Índice de Barthel está entre 0 y 100, con intervalos de 5 puntos. A menor puntuación, más dependencia; y a mayor puntuación, más independencia. Además, el Índice Barthel puede usarse asignando puntuaciones con intervalos de 1 punto entre las categorías – las posibles puntuaciones para las actividades son 0, 1, 2, o 3 puntos – resultando un rango global entre 0 y 20. Los puntos de corte sugeridos por algunos autores para facilitar la interpretación son:



- 0-20 dependencia total.
- 21-60 dependencia severa.
- 61-90 dependencia moderada.
- 91-99 dependencia escasa.
- 100 independencia.



2. VALORACIÓN DE CLÍNICA



2.1. Procedimientos a realizar por enfermería:

2.1.1. Variables antropométricas: Peso en Kg e IMC en Kg/m²

2.1.2. Escalas de dolor:

a/ Escala numérica de dolor (la misma que el médico)

Actor: Durante el ingreso: Enfermería

b/ Test S-LASS

Actor: Durante el ingreso: Enfermería

2.2. Procedimientos a realizar por el médico

2.2.1. Hábitos: Tabaco y/o ingesta de sal.

2.2.2. Clasificación ASA

Actor: Medico (Anestesista-Traumatólogo)



SISTEMA DE CLASIFICACIÓN ASA

Sistema de clasificación que utiliza la American Society of Anesthesiologists (ASA) para estimar el riesgo que plantea la anestesia para los distintos estados del paciente.

Clase I	Paciente saludable no sometido a cirugía electiva
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Clase III	Paciente con enfermedad sistémica grave, pero no incapacitante. Por ejemplo: cardiopatía severa o descompensada, diabetes mellitus no compensada acompañada de alteraciones orgánicas vasculares sistémicas (micro y macroangiopatía diabética), insuficiencia respiratoria de moderada a severa, angor pectoris, infarto al miocardio antiguo, etc.
Clase IV	Paciente con enfermedad sistémica grave e incapacitante, que constituye además amenaza constante para la vida, y que no siempre se puede corregir por medio de la cirugía. Por ejemplo: insuficiencias cardíaca, respiratoria y renal severas (descompensadas), angina persistente, miocarditis activa, diabetes mellitus descompensada con complicaciones severas en otros órganos, etc.
Clase V	Se trata del enfermo terminal o moribundo, cuya expectativa de vida no se espera sea mayor de 24 horas, con o sin tratamiento quirúrgico. Por ejemplo: ruptura de aneurisma aórtico con choque hipovolémico severo, traumatismo craneoencefálico con edema cerebral severo, embolismo pulmonar masivo, etc. La mayoría de estos pacientes requieren la cirugía como medida heroica con anestesia muy superficial.

Nota: Debe ser el mismo que en la identificación del caso.



2.2.3. Cuestionario de WOMAC

Actor: Médico (Traumatólogo).

TABLA I. Cuestionario de Womac

<i>APARTADO A. Pregunta: ¿Cuánto dolor tiene?</i>	<i>Ninguno</i>	<i>Poco</i>	<i>Bastante</i>	<i>Mucho</i>	<i>Muchísimo</i>
Al andar por terreno llano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Al subir y bajar escaleras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Por la noche en la cama	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Al estar sentado y tumbado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Al estar de pie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>APARTADO B. Pregunta: ¿Cuánta rigidez nota?</i>	<i>Ninguno</i>	<i>Poco</i>	<i>Bastante</i>	<i>Mucho</i>	<i>Muchísimo</i>
Después de despertarse por la mañana	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Durante el resto del día	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>APARTADO C. Pregunta: ¿Qué grado de dificultad tiene al...?</i>	<i>Ninguno</i>	<i>Poco</i>	<i>Bastante</i>	<i>Mucho</i>	<i>Muchísimo</i>
Bajar escaleras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subir escaleras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levantarse después de estar sentado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Estar de pie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Agacharse para coger algo del suelo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Andar por un terreno llano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entrar y salir del coche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ir de compras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ponerse las medias o los calcetines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levantarse de la cama	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quitarse las medias o los calcetines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Estar tumbado en la cama	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entrar y salir de la ducha/bañera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Estar sentado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sentarse y levantarse del retrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hacer tareas domésticas pesadas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hacer tareas domésticas livianas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Valoración Puntuación: cada una de las dimensiones se valora independientemente mediante la suma de los ítems que la componen, sin sumar las distintas puntuaciones en un valor único total. Se recomienda no agregar las 3 dimensiones en una puntuación global. Sin embargo, en caso de que sea necesario, ésta también puede obtenerse. Los autores de la versión original sugieren un método de ponderación. Bajas puntuaciones indican una mejor función, menor dolor o mayor capacidad funcional.



2.2.4. Escalas de dolor

a/ Escala numérica de dolor

Actor: Antes del ingreso: Anestesista.

Durante el ingreso: Enfermería.

LA ESCALA NUMÉRICA (EN):

Escala numerada de 0-10, donde 0 es la ausencia y 10 la mayor intensidad, el paciente selecciona el número que mejor evalúa la intensidad del síntoma.

0	1	2	3	4	5	6	7	8	9	10
<i>Sin dolor</i>										<i>Máximo dolor</i>

b/ Test S-LASS

Actor: Antes del ingreso: Anestesista.

Durante el ingreso: Enfermería.



- 1. In the area where you have pain, do you also have ‘pins and needles’, tingling or prickling sensations?**
 - a) NO – I don’t get these sensations (0)
 - b) YES – I get these sensations often (5)

- 2. Does the painful area change colour (perhaps looks mottled or more red) when the pain is particularly bad?**
 - a) NO – The pain does not affect the colour of my skin (0)
 - b) YES – I have noticed that the pain does make my skin look different from normal (5)

- 3. Does your pain make the affected skin abnormally sensitive to touch? Getting unpleasant sensations or pain when lightly stroking the skin might describe this.**
 - a) NO – The pain does not make my skin in that area abnormally sensitive to touch (0)
 - b) YES – My skin in that area is particularly sensitive to touch (3)

- 4. Does your pain come on suddenly and in bursts for no apparent reason when you are completely still? Words like ‘electric shocks’, jumping and bursting might describe this.**
 - a) NO – My pain doesn’t really feel like this (0)
 - b) YES – I get these sensations often (2)

- 5. In the area where you have pain, does your skin feel unusually hot like a burning pain?**
 - a) NO – I don’t have burning pain (0)
 - b) YES – I get burning pain often (1)

- 6. Gently rub the painful area with your index finger and then rub a non-painful area (for example, an area of skin further away or on the opposite side from the painful area). How does this rubbing feel in the painful area?**
 - a) The painful area feels no different from the non-painful area (0)
 - b) I feel discomfort, like pins and needles, tingling or burning in the painful area that is different from the non-painful area (5)

- 7. Gently press on the painful area with your finger tip then gently press in the same way onto a non-painful area (the same non-painful area that you chose in the last question). How does this feel in the painful area?**
 - a) The painful area does not feel different from the non-painful area (0)
 - b) I feel numbness or tenderness in the painful area that is different from the non-painful area (3)

Valoración: Un score ≥ 12 sugiere dolor predominantemente de origen neuropático.



3. VALORACION DE BARRERAS



3. 1. Adherencia/ Tratamiento

Autor: Enfermería

- Cumplimiento.

1/ Bueno: Se constata retirada de más del 80% de la medicación de la oficina de Farmacia.

2/ Malo: No se constata retirada de más del 80% de la medicación de la oficina de Farmacia.

- Complejidad/ Habilidad para ejecutarlo:

1–Toma más de 4 comprimidos al día.

2–El tratamiento es difícil de preparar.

3–Difícil de ejecutar o el paciente no es capaz de hacerlo bien.

Valoración: 1 o más ítems positivos determinan el tratamiento como complejo.

3. 2. Social

Autor: Enfermería

Valoración Global: la Identificación como factor negativo en cualquiera de las áreas será indicación de una valoración más profunda por la asistente social de nuestro centro.

- Vivienda.



La situación de la vivienda se valora como un factor que puede impactar en la evolución del paciente de forma negativa si se identifica alguna de las siguientes situaciones:

1/ Acceso difícil (No dispone de ascensor, vive en un edificio y el paciente tiene un mal estado funcional basal).

2/ Insalubre o valorada como inadecuada previamente por los servicios sociales.

- Autocura/ Soporte familiar/ Cuidador.

La autocura o el soporte familiar son valorados como factores que pueden impactar negativamente en la evolución del paciente si se da alguna de las siguientes situaciones:

1/ Baja capacidad de autocura reportada por servicios sociales o puntuación desfavorable en test de autocura*.

2/ Cuidador claudicado o inadecuado (reportado por servicios sociales o profesionales sanitarios (médico o enfermera).

*Test de Autocura:

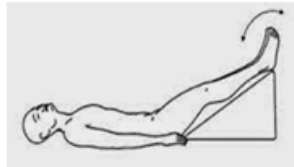
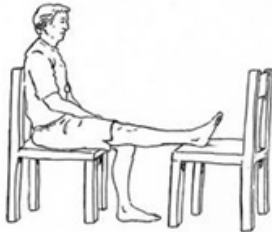
1/ Paciente con insuficiencia cardiaca:

Autor: Autotest que da enfermería.



TEST AUTOCURA (durant l'ingrés)

- Quants cops he de realitzar els exercicis de rehabilitació?
 - Un cop al dia
 - No s'han de fer
 - 4 cops al dia
- Que he de fer si s'inflama la cama?



- Quan s'ha de curar la ferida?
 - Cada dia
 - En cas de sagnat o deteriorament de l'apòsit aniré al meu CAP de referència
 - Mai



• **Que és millor per a la meva recuperació?**

- Fer repòs al llit
- Circuit durant el dia → Caminar, repòs cadira o llit, exercicis
- Estar tot el dia de peu

• **Com controlo el dolor?**

- Prenent doble dosi de calmant
- Seguir la pauta mèdica d'analgèsia i aplicant gel en el cas de pròtesi de genoll
- Aguantar el dolor

• **I si tinc molt dolor tot i prendre correctament la pauta d'analgèsia?**

- Aguantar el dolor
- Prenent doble dosi de calmant
- Ho comunicaré al meu metge de capçalera

Valoración: Se considera buena autocura 4 o más respuestas correctas.



DEFINICIÓN DEL PLAN DE TRABAJO

**1. Autotest pacientes crónicos dados de alta de cirugía traumatólogica.****Autor:** Autotest para paciente.

Respirar	Respiro pitjor *	Respiro igual
Vòmit	He vomitat *	No he vomitat
Mareig	Em marejo sovint *	No em marejo
Menjar	Menjo menys *	Menjo igual
Beure	Bec menys	Bec igual
Orinar	Orino menys *	Orino igual
Defecar	Em costa més *	Defeco igual
Moure's	Em moc menys	Em moc igual
Temperatura	Tinc febre(>37º)*	No tinc febre
Repòs i son	Em costa més	Dormo igual



Neteja corporal	Amb ajuda	Em netejo sol
Vestir-se	Amb ajuda	Em vesteixo sol

Valoración: En amarillo (Alarma)

2. Escalas de dolor:

a/ Escala numérica de dolor

Actor: Autotest para el paciente.

LA ESCALA NUMÉRICA (EN):

Escala numerada del 0-10, donde 0 es la ausencia y 10 la mayor intensidad, el paciente selecciona el número que mejor evalúa la intensidad del síntoma.

0	1	2	3	4	5	6	7	8	9	10
Sin dolor										Máximo dolor



b/ Tests S-LASS

Actor: Autotest para el paciente.

1. En el área donde usted tiene dolor, ¿también tiene sensación de “pinchazos” o sensación de picor u hormigueo?
 - a. No – No tengo esas sensaciones (0)
 - b. Sí – Si tengo esas sensaciones con frecuencia (5)
2. ¿Cambia de color la zona dolorida (quizá se ve enrojecida), cuando usted siente dolor?
 - a. No – El dolor no afecta el color de mi piel. (0)
 - b. Sí – He notado que cuando tengo dolor, mi piel tiene un tono de color diferente al normal (5)
3. En el área donde usted tiene dolor, ¿su piel presenta una sensibilidad anormal al tacto? Por ejemplo, al acariciar ligeramente la piel se producen sensaciones desagradables o dolorosas.
 - a. No – El área dolorosa no presenta una sensibilidad anormal. (0)
 - b. Sí – Mi piel en la zona donde duele es particularmente sensible al tacto. (3)
4. ¿El dolor aparece de repente y en ráfagas sin razón aparente, aunque esté completamente quieto? Estas sensaciones se podrían describir como “descargas eléctricas” o ráfagas.
 - a. No – Mi dolor no es así. (0)
 - b. Sí – Tengo estas sensaciones con frecuencia. (2)
5. En el área donde usted tiene dolor, ¿siente calor o un dolor quemante (quemazón)?
 - a. No – No tengo dolor quemante. (0)
 - b. Sí – Tengo dolor quemante con frecuencia. (1)
6. Frótese suavemente con el dedo índice el área que le duele y después realice lo mismo en un área sin dolor (por ejemplo, en un área de piel alejada o en el lado opuesto a la zona del dolor) ¿Cómo siente ese rozamiento en la zona dolorosa?
 - a. Se siente igual en el área que duele y donde no duele.
 - b. Siento una incomodidad como hormigueos, alfileres, o quemazón en el sitio donde duele y es diferente del área que no duele. (5)
7. Presione suavemente con su dedo un área que le duela y luego presione de la misma forma en otra área que no le duela (la misma zona sin dolor que seleccionó en la pregunta anterior). ¿Cómo siente la presión en el área dolorosa?
 - a. Se siente igual en el área que duele y donde no duele.
 - b. Siento un adormecimiento o sensibilidad en el sitio donde duele y es diferente del área que no duele. (3)

Valoración: Un score ≥ 12 sugiere dolor predominantemente de origen neuropático.



CONNECARE

User Document	
Working Team Meeting Report	
Case Study: 1	Site: Lleida
Cycle: 2nd	Date: 30/5/2017

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
<input checked="" type="checkbox"/> CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 1-6-2017



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 1 - Lleida – 2 nd cycle – 30/5/2017

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Jordi de Battle / Eloisa Vargiu	Email	eloisa.vargiu@eurecat.org
Partner	IRBLL / EURECAT	Phone	

Abstract	This document reports on the meeting held in Lleida on May 30 th , 2017 with the working team with clinicians for the Hospital of Santa Maria and the Hospital Arnau i Vilanova en Lleida.
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2.3 ORGANIZATIONAL ASPECTS	7
3. NEXT STEPS	8



1. Executive Summary

1.1 Objectives

The first meeting of the 2nd PDSA cycle was focused on showing the current stage of the SACM mock-ups wireframes in order to receive feedback, comments, suggestions, and criticisms.

The meeting was participated by clinicians from Hospital Santa Maria, Hospital Arnau de Vilanova and Primary care of the Health Care area of Lleida. As in the previous meetings, also 1 COPD patient participated.

1.2 Results

Clinicians state that one of the main contributions we can make is to achieve that professionals stop seeing the patient as a written text and see it again as a “photo”, an image they can remember and touch. A change in the current paradigm in which the professional is actually adapted to the technique and not the technique to the professional.



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Anna Perez	Internal medicine physician	Hospital de Santa María
Araceli Fuentes	Primary care physician	Health care area of Lleida
Eloisa Vargiu	Technician	Eurecat
Gerard Torres	Internal medicine physician	Hospital de Santa María
Jordi de Batlle	Epidemiologist	IRBLleida
Jose Maria Martinez	Case manager	Hospital de Santa María
Juan Manuel Fernández	Technician	Eurecat
Maria Mingot	Social Worker	Hospital de Santa María
Miquel Mesas	Computer department	Hospital de Santa María
Montserrat Boix	COPD Patient	
Luis Fernando Casas	Pneumologist	Hospital Arnau de Vilanova
Imma Brabolla	Administration department	Hospital de Santa María
Marta Ortega	Primary care physician	Hospital de Santa María

2.2 Collected Data

First of all the high-level requirements of the SACM user interface have been listed:

- Attractive and friendly: thought by clinicians for clinicians;
- Really novel: nothing recycled from other fields;
- Operational: effective, not only efficient;
- Quick: do a lot with a few clicks;
- Intuitive: ready in 10 minutes, very easy to use;
- Visual: clinicians like to see and touch patients;
- Easy to update: new versions easily available;
- Goal-oriented: the main aim to make easy care, not the professional control.

Gerard Torres presented the main view of the SACM wireframes and focused especially on the summary in which all most relevant features and measures have to be displayed.


A practical example with a real clinical case is presented:

- Comorbidities (from Charlson)
 - COPD




- Diabetes with affectation of target organs;
- Myocardial infarction;
- Moderate or severe renal impairment.
- Cognitive
 - No emotional problems;
 - No cognitive deterioration.
- Functional:
 - Obese;
 - Acceptable autonomy.
- Level of disease
 - Sever COPD
- Barriers
 - Complex treatment and skills to execute it limit;
 - The house is appropriate but has no family support or good caretaker.





The corresponding summary should be the one in the figure:



Clinical history



Pharmacy

Lluís Russiny **Age: 81** **Diagnosis: COPD**

You are logged in as: Dr. Connecare (Clinician)

Summary

Process

Team





Notification

Forum

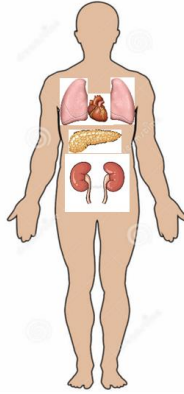
Patient Status

Comorbidity status (Charlson)	6
HAD	A 3 D 3
Pffeifer	2 error.
Functional status(Barthel)	85
Anthropometric data (BMI)	30 Kg/m
GOLD	IV
CODEX	9

Devices

THRESH|OLDS



Barriers

Accessibility to the treatment	Bad Value
Treatment Adherence	Normal
Complexity of the treatment	Bad Value
Self-care questionnaire	Normal
Carer / Family support	Bad Value
Dwelling	Normal

Let us note that: clicking on each of the device, a graphical vision of the trend should be shown; clicking on “Thresholds”, measures –gathered by the devices– that overpass a given predefined thresholds are shown (alerts to be taken into account by professionals); and clicking on the organ the clinical history of the patient concerning that organ should be displayed. An access to specific screens of the usual computed clinical history (SAP, e-CAP) or records is proposed (yellow keys).



2.3 Organizational Aspects

It appeared clear from the meeting the relevance to have the SACM fully integrated with the hospitals, primary care system, and also pharmacy. In this way, the SACM will access directly to those systems to have all the needed information in every step of the process.

The EURECAT team agreed with this important aspect and remind that this will be part of the FinalRelease of the system and that, for organizational and political issues, it will be impossible to have such integration in the StudyRelease expected at M18 (September 2017).



3. Next Steps

A new meeting has been scheduled on June 21st, 2017 to share with all the participants the clickable design of the SMS and a short demo. Results from that meeting will be reported in the GA meeting on June 26th, 27th in London.



CONNECARE

User Document	
Working Team Meeting Report	
Case Study: 2	Site: Lleida
Cycle: 2nd	Date: 30/5/2017

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Date: 2-6-2017



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

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Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
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2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Albert Bigorda	Physiotherapist	Hospital de Santa María
Araceli Fuentes	Primary care physician	Hospital de Santa María
Eloisa Vargiu	Technician	Eurecat
Gerard Torres	Internal medicine physician	Hospital de Santa María
Imma Barbolla	Administration department	Hospital de Santa María
Jordi Colomina	Orthopedics surgeon	Hospital de Santa María
Jordi de Batlle	Epidemiologist	IRBLleida
Juan Manuel Fernández	Technician	Eurecat
Maria Aguilà	Nurse	Hospital de Santa María
Miquel Mesas	Computer department	Hospital de Santa María
Oscar Sacristan	Internal medicine physician	Hospital de Santa María
Reis Drudis	Anesthesiologist	Hospital de Santa María
Marta Ortega	Primary care physician	Hospital de Santa María

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 - COPD
 - Diabetes with affectionation of target organs;
 - Moderate or severe renal impairment.
- Cognitive
 - No emotional problems;
 - No cognitive deterioration.
- Functional:
 - Obese;
 - Acceptable autonomy.
- Level of disease
 - Right knee intervention (ASA III);
 - A lot of pain and functional impotence before the intervention (WOMAC).
- Barriers
 - Complex treatment and limited skills to execute it;
 - The house is appropriate but has no family support or good caretaker.

The corresponding summary should be the one in the figure:



You are logged in as: **Dr. Connecare (Clinician)**

Clinical history **Lluís Russiny** **Age: 81** **Diagnosis: Knee arthroplasty**

Pharmacy

Summary Process Team Notification Forum

Patient Status	
Comorbidity status (Charlson)	4
HAD	A 3 D 3
Pfeifer	2 error.
Functional status(Barthel)	85
Anthropometric data (BMI)	30 Kg/m
ASA	III
WOMAC	P15 S5 F50

Barriers	
Accessibility to the treatment	Bad Value
Treatment Adherence	Normal
Complexity of the treatment	Bad Value
Self-care questionnaire	Normal
Carer / Family support	Bad Value
Dwelling	Normal

Autotest **Devices** **THRESHOLDS**

Let us note that: clicking on each of the autotest and device, a graphical vision of the trend should be shown; clicking on “Thresholds”, measures –gathered by the autotest and/or devices– that overpass a given predefined thresholds are shown (alerts to be taken into account by professionals); and clicking on the organ the clinical history of the patient concerning that organ should be displayed, including the limb under surgical intervention. An access to specific screens of the usual computed clinical history (SAP, e-CAP) or records is proposed (yellow keys).

A proposal of improvement of data to be shown in the screen, based in adding the diagnosis of disease that leads to the surgical procedure and the date of the surgery was suggested.

2.3 Organizational Aspects

It appeared clear from the meeting the relevance to have the SACM fully integrated with the hospital, primary care system, and also pharmacy. In this way, the SACM will access directly to those systems to have all the needed information in every step of the process.

The EURECAT team agreed with this important aspect and remind that this will be part of the FinalRelease of the system and that, for organizational and political issues, it will be impossible to have such integration in the StudyRelease expected at M18 (September 2017).



3. Next Steps

A new meeting has been scheduled on June 21st, 2017 to share with all the participants the clickable design of the SMS and a short demo. Results from that meeting will be reported in the GA meeting on June 26th, 27th in London.



6.1.3 Groningen (The Netherlands)



CONNECARE

User Document

Working Team Meeting Report

Case Study: 2

**Site: University Medical Center
Groningen**

Cycle: 1st

Date: 7 October 2016

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 04-01-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
· · CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 14-10-2016



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 2 - UMCG – 1 st cycle – 07/10/2016

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Maarten Lahr	Email	m.m.h.lahr@umcg.nl
Partner	UMCG	Phone	+31 (0)50 3614386

Abstract	This document reports on the meeting held in Groningen (University Medical Center Groningen- UMCG) on October 7 th of 2016, regarding CONNECARE case study 2, with the working team with clinicians of UMCG.
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1. Executive Summary

1.1 Objectives

The first objective of the meeting was to discuss the focus and aims of CONNECARE case study 2 program for *Elective surgery* patient.

After discussion, specific aspects will be identified that should be given priority in order to be ready to initiate CONNECARE technical developments to prepare for the start of the CONNECARE clinical trials at M18.

1.2 Results

The first result of the meeting was raising awareness and defining the aims and goals of case study 2 of the CONNECARE project in our region. The preparation of the clinical trial was discussed, e.g. patient inclusion, aspects of the intervention, measurements and follow-up. The proposal from the department of surgery UMCG was to link the CONNECARE project to the PICNIC trial. The PICNIC trial is a clinical study performed at the department of surgery of the UMCG which has parallel aims and goals compared to the CONNECARE project. The plan is to use the recruitment strategy as performed in the PICNIC trial also for the CONNECARE project. This way efficient working processes already in place can be utilized. Recruitment of capacity in support of the regional project leader (M.Lahr) was also discussed. Ultimately, concrete actions were agreed for the next steps in the project. As part of this regular meeting were planned for the working teams, which will be held every 4-6 weeks.



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Dr. Maarten Lahr	Regional project leader	UMCG
Dr. Barbara van Leeuwen	Surgeon	UMCG
Drs. Hanneke Vervoort	Research nurse	UMCG

2.2 Collected Data

The workflow for Case Study 2 is presented as described deliverable D7.1: Evaluation Plan for the Entire Project (Paragraph 6.2.3.)

2.3 Organizational Aspects

The parties involved in the CONNECARE project agree on aligning coordinated care needs of patients and older adults in the community with future digital health tools of the UMCG. Currently the UMCG is implementing an electronic patient dossier (EPD), which is expected to go live at the end of 2017.



3. Next Steps

A new meeting will be scheduled for December.

Before, the following actions are required:

- Develop research protocol and submit for pre-evaluation ethics committee UMCG
- Invite IT partner for next meeting to discuss the SACM and workflow diagrams
- Developed workflow diagrams for surgical patients
-
- Evaluate CONNECARE system demo produced by IPHealth
- Set-up meeting with regional IT partners of both case studies to assess connection to CONNECARE system
- Evaluate first mock-ups of the CONNECARE system



CONNECARE

User Document	
Working Team Meeting Report	
Case Study: 1	Site: University Medical Center Groningen
Cycle: 1st	Date: 20 October 2016

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 04-01-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
• • CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 27-10-2016



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 1 - UMCG – 1 st cycle – 20/10/2016

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Maarten Lahr	Email	m.m.h.lahr@umcg.nl
Partner	UMCG	Phone	+31 (0)50 3614386

Abstract	This document reports on the meeting held in Groningen (University Medical Center Groningen- UMCG) on October 20 th of 2016, regarding CONNECARE case study 1, with the working team with clinicians of UMCG and IPHealth.
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1. Executive Summary

1.1 Objectives

The first objective of the meeting was to discuss the focus and aims of CONNECARE case study 1 programs with all participants for a) *Community-based management of Complex Chronic Patients (CCP) – Embrace, an integrated elderly care model* and b) *the asthma and COPD telehealth service*.

The aim is to revise with all participants what are the focus and aims of CONNECARE case study 1. After discussion, specific aspects will be identified that should be given priority in order to be ready to initiate CONNECARE technical developments to prepare for the start of the CONNECARE clinical trials at M18.

1.2 Results

The first result of the meeting was the awareness by all participants regarding the aims and goals of the CONNECARE project. In relation to the specific studies (Embrace and the Asthma/COPD telehealth program) the preparation of the clinical trials were discussed. Division of labor was also discussed among clinical partners and in collaboration with our IT partner in the region (IPHealth). Also recruitment of capacity in support of the regional project leader (M.Lahr) on the different case studies was discussed. Ultimately, concrete actions were agreed for the next steps in the project. As part of this regular meeting were planned for the working teams, which will be held every 3 weeks.



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Dr. Maarten Lahr	Regional project leader	UMCG
Dr. Margot Jager	Postdoctoral researcher, Embrace	UMCG
Drs. Esther Metting	Postdoctoral researcher, asthma/COPD telehealth service	UMCG
Drs. Vincent Weijers	Chief technology officer	IPHealth
Drs. Robbert van der Veen	Project manager	Bosssers and Cnossen

2.2 Collected Data

The workflow for Case Study 1 is presented as described in detail in deliverable D7.1: Evaluation Plan for the Entire Project (*Annex B. Case study 1.1: Embrace, and integrated elderly care model, and Annex B Case study 1.2: the asthma and COPD telehealth service.*

2.3 Organizational Aspects

The parties involved in the CONNECARE project agree on aligning coordinated care needs of patients and older adults in the community with future digital health tools of the UMCG. Currently the UMCG is implementing an electronic patient dossier (EPD), which is expected to go live at the end of 2017.



3. Next Steps

A new meeting will be scheduled for December.

Before, the following actions are required:

- Set-up list of expectations in terms self-management and self-management tools
- Develop research protocol and submit for pre-evaluation ethics committee UMCG
- Evaluate CONNECARE system demo produced by IPHealth
- Set-up meeting with regional IT partners of both case studies to assess connection to CONNECARE system
- Evaluate first mock-ups of the CONNECARE system



CONNECARE

User Document

Working Team Meeting Report

Case Study: 2

**Site: University Medical Center
Groningen**

Cycle: 2nd

Date: 5 December 2016

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 04-01-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
• • CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 3-10-2017



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 2 - UMCG – 2 nd cycle – 05/12/2016

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Maarten Lahr	Email	m.m.h.lahr@umcg.nl
Partner	UMCG	Phone	+31 (0)50 3614386

Abstract	This document reports on the meeting held in Groningen (University Medical Center Groningen- UMCG) on December 5 th of 2016, regarding CONNECARE case study 2, with the working team with clinicians of UMCG and IPHealth.
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1. Executive Summary

1.1 Objectives

The objective of the meeting was synchronization of activities between clinical and IT partners, to discuss the progress made on the research protocols, the status of the mock-ups of the CONNECARE system and the division of labor and planning for the upcoming period.

1.2 Results

The first result of the meeting was that the clinical partners provided feedback on the SMS requirements requested by IPHealth. Regional IT partners of both Embrace and the asthma/COPD telehealth service have provided feedback on items available to connect to the CONNECARE system. Also a concerted efforts on the research protocols for both programs involved in case study 1 was discussed, to avoid double actions and efforts. Furthermore we have received a message from the medical ethics review board of the UMCG (further called METc UMCG) stating that the CONNECARE proposal fulfills all the requirements for patient anonymity and is in agreement with the regulations concerning the collection and storage of patients data. The METc UMCG declares that there a no medical ethical obligations as meant in the Medical Research Involving Human Subject Act (WMO).



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Dr. Maarten Lahr	Regional project leader	UMCG
Dr. Margot Jager	Postdoctoral researcher, Embrace	UMCG
Drs. Esther Metting	Postdoctoral researcher, asthma/COPD telehealth service	UMCG
Drs. Vincent Weijers	Chief technology officer	IPHealth
Drs. Robbert van der Veen	Project manager	Bossers and Clossen

2.2 Collected Data

The workflow for Case Study 1 is presented as described in detail in deliverable D7.1: Evaluation Plan for the Entire Project (*Annex B. Case study 1.1: Embrace, and integrated elderly care model, and Annex B Case study 1.2: the asthma and COPD telehealth service*). The workflows of the Embrace and asthma/COPD telehealth programs are depicted in Figures 1 and 2, respectively.

2.3 Organizational Aspects

The parties involved in the CONNECARE project agree on aligning coordinated care needs of patients and older adults in the community with future digital health tools of the UMCG. Currently the UMCG is implementing an electronic patient dossier (EPD), which is expected to go live at the end of 2017. integrated care at a regional level. The regional project leader (M.Lahr) will identify key stakeholders in the UMCG to align future activities.



Figure 1: workflow for the Embrace program

Figure 2: workflow for the asthma/COPD telehealth service



3. Next Steps

A new meeting will be scheduled for February.

Before, the following actions are required:

- Discuss list of expectations in terms self-management and self-management tools
- Update en discuss the research protocols for CS1
- To transform the workflows of CS1 into CMMN diagrams
- Discuss new mock-ups of the CONNECARE system



CONNECARE

User Document

Working Team Meeting Report

Case Study: 1

**Site: University Medical Center
Groningen**

Cycle: 2nd

Date: 12/13/2016

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 04-01-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
• • CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 23-12-2016



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 1 - UMCG – 2 nd cycle – 13/12/2016

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Maarten Lahr	Email	m.m.h.lahr@umcg.nl
Partner	UMCG	Phone	+31 (0)50 3614386

Abstract	This document reports on the meeting held in Groningen (University Medical Center Groningen- UMCG) on December 13 th of 2016, regarding CONNECARE case study 1, with the working team with clinicians of UMCG and IPHealth.
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1. Executive Summary

1.1 Objectives

The objective of the meeting was synchronization of activities between clinical and IT partners, to discuss the progress made on the research protocols, the status of the mock-ups of the CONNECARE system and the division of labor and planning for the upcoming period.

1.2 Results

The first result of the meeting was that the clinical partners provided feedback on the SMS requirements requested by IPHealth. Regional IT partners of both Embrace and the asthma/COPD telehealth service have provided feedback on items available to connect to the CONNECARE system. Also a concerted efforts on the research protocols for both programs involved in case study 1 was discussed, to avoid double actions and efforts. Furthermore we have received a message from the medical ethics review board of the UMCG (further called METc UMCG) stating that the CONNECARE proposal fulfills all the requirements for patient anonymity and is in agreement with the regulations concerning the collection and storage of patients data. The METc UMCG declares that there a no medical ethical obligations as meant in the Medical Research Involving Human Subject Act (WMO).



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Dr. Maarten Lahr	Regional project leader	UMCG
Dr. Margot Jager	Postdoctoral researcher, Embrace	UMCG
Drs. Esther Metting	Postdoctoral researcher, asthma/COPD telehealth service	UMCG
Drs. Vincent Weijers	Chief technology officer	IPHealth
Drs. Robbert van der Veen	Project manager	Bossers and Crossen

2.2 Collected Data

The workflow for Case Study 1 is presented as described in detail in deliverable D7.1: Evaluation Plan for the Entire Project (*Annex B. Case study 1.1: Embrace, and integrated elderly care model, and Annex B Case study 1.2: the asthma and COPD telehealth service.*

2.3 Organizational Aspects

The parties involved in the CONNECARE project agree on aligning coordinated care needs of patients and older adults in the community with future digital health tools of the UMCG. Currently the UMCG is implementing an electronic patient dossier (EPD), which is expected to go live at the end of 2017. integrated care at a regional level. The regional project leader (M.Lahr) will identify key stakeholders in the UMCG to align future activities.



3. Next Steps

A new meeting will be scheduled for February.

Before, the following actions are required:

- Discuss list of expectations in terms self-management and self-management tools
- Update en discuss the research protocols for CS1
- To transform the workflows of CS1 into CMMN diagrams
- Discuss new mock-ups of the CONNECARE system



CONNECARE

User Document	
Working Team Meeting Report	
Case Study: 1	Site: University Medical Center Groningen
Cycle: 3rd	Date: 2/2/2017

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 04-01-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
• • CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 10-3-2017



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 1 - UMCG – 3 rd cycle – 2/2/2017

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Maarten Lahr	Email	m.m.h.lahr@umcg.nl
Partner	UMCG	Phone	+31 (0)50 3614386

Abstract	This document reports on the meeting held in Groningen (University Medical Center Groningen- UMCG) on February 2 nd of 2017, regarding CONNECARE case study 1, with the working team with clinicians of UMCG and IPHealth.
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1. Executive Summary

1.1 Objectives

The objective of the meeting was to discuss the new version of the mock-ups, division of labor between regional IT partners (IPHealth and Bossers and Cnossen), the preparation of the clinical trials (study design and planning) and to prepare for the virtual PB meeting of CONNECARE.

1.2 Results

We discussed the possibilities of Bossers and Cnossen to support the development of the mock-ups of the system, in relation to the focus group meetings with users for CS1 which is planned for April of this year. The planning is to have the feedback from the focus groups at the end of May. Based on this feedback the mock-ups will be further developed. The planning is to do a second focus group meeting with the beta version of the mock-up in the summer. Before the 15th of August we are planning to finish the second qualitative study. Other points that were discussed were the clinical care items for CS1 which we want to feed into the CONNECARE system, e.g. demographic and baseline clinical characteristics of the intended users.



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Dr. Maarten Lahr	Regional project leader	UMCG
Dr. Margot Jager	Postdoctoral researcher, Embrace	UMCG
Drs. Esther Metting	Postdoctoral researcher, asthma/COPD telehealth service	UMCG
Drs. Vincent Weijers	Chief technology officer	IPHealth
Drs. Robbert van der Veen	Project manager	Bossers and Cnossen

2.2 Collected Data

The workflow for Case Study 1 is presented as described in detail in deliverable D7.1: Evaluation Plan for the Entire Project (*Annex B. Case study 1.1: Embrace, and integrated elderly care model, and Annex B Case study 1.2: the asthma and COPD telehealth service*). The workflows of the Embrace and asthma/COPD telehealth programs are depicted in Figures 1 and 2, respectively.

2.3 Organizational Aspects

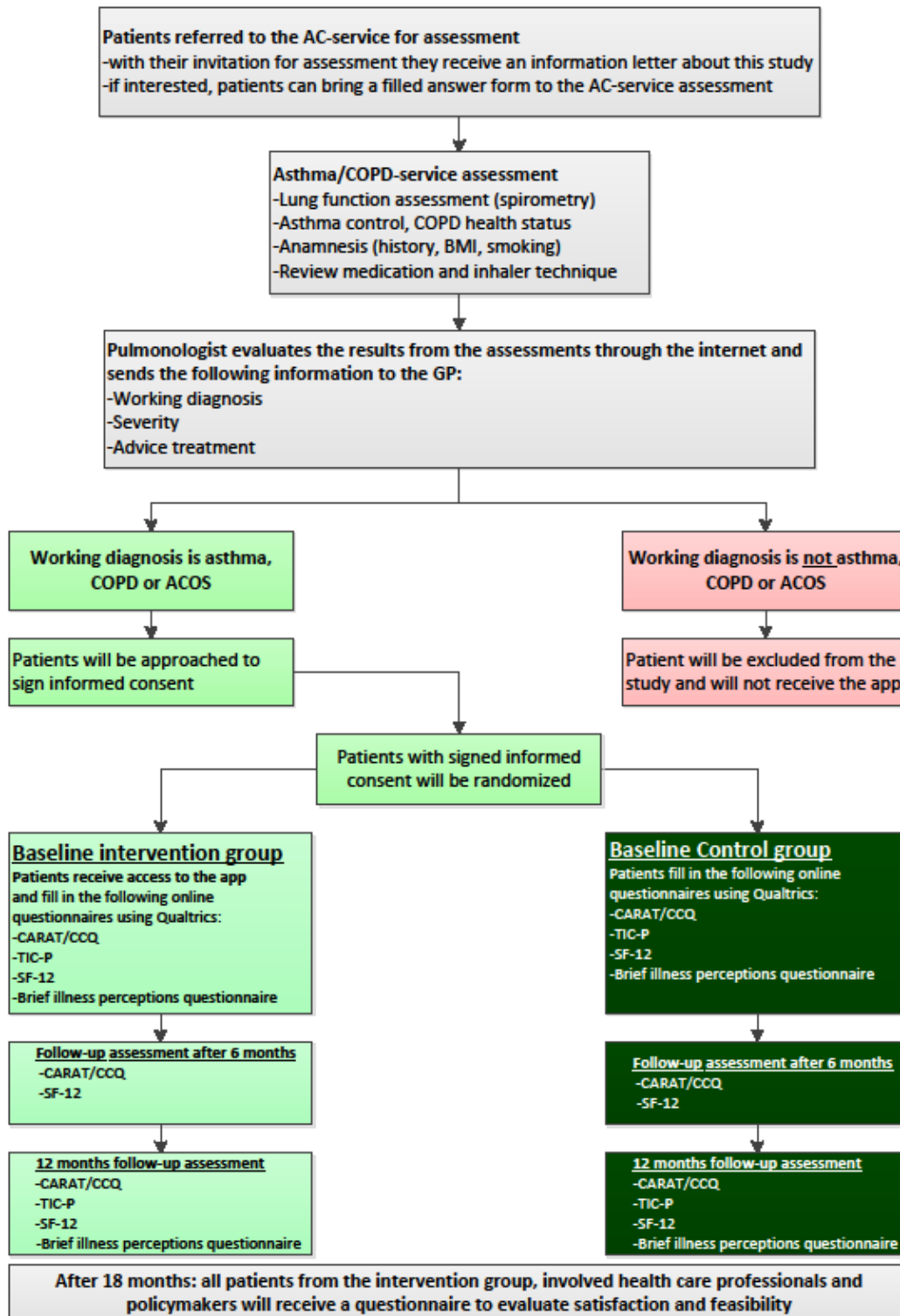
The parties involved in the CONNECARE project agree on aligning coordinated care needs of patients and older adults in the community with future digital health tools of the UMCG. Currently the UMCG is implementing an electronic patient dossier (EPD), which is expected to go live at the end of 2017. integrated care at a regional level. The regional project leader (M.Lahr) will identify key stakeholders in the UMCG to align future activities. Because coupling the EPD at this moment is not feasible, a meeting with the IT department of the UMCG has been planned to discuss the use of a stand-alone outside the hospital containing all relevant medical information of patients which we want to feed into the CONNECARE system.



Figure 1: workflow for the Embrace program



Figure 2: workflow for the asthma/COPD telehealth service





3. Next Steps

A new meeting will be scheduled for March.

Before, the following actions are required:

- Discuss list of medical information items of users to feed into the CONNECARE system
- Update en discuss the research protocols for CS1
- Discuss the CMMN diagrams for CS1



CONNECARE

User Document

Working Team Meeting Report

Case Study: 1 and 2

**Site: University Medical Center
Groningen**

Cycle: 7th

Date: 6/04/2017

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 04-01-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
• • CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 21-5-2017



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 1 - UMCG – 7 th cycle – 06/04/2017

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Maarten Lahr	Email	m.m.h.lahr@umcg.nl
Partner	UMCG	Phone	+31 (0)50 3614386

Abstract	This document reports on the meeting held in Groningen (University Medical Center Groningen- UMCG) on April 6 th of 2017, regarding CONNECARE case studies 1 and 2, with the working team with clinicians of UMCG and IPHealth.
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1. Executive Summary

1.1 Objectives

The objectives of the meeting were to finalize the research protocols for CS1 and CS2, to discuss the progress made on the focus group meetings, the request for feedback on the SACM model and digital questionnaires.

The aim is to agree finalize the research protocols in order to provide specific feedback on the SACM and digital questionnaires that are going to be available in the CONNECARE system. Also we wanted to discuss the use of mobile devices for the evaluation of patients during the clinical studies.

1.2 Results

For CS1 we decided not to submit the full version of the research protocol to our ethics committee. As documented in earlier working team meetings, we already have a signed statement for the medical ethics review board of the UMCG (further called METc UMCG) stating that the CONNECARE proposal fulfills all the requirements for patient anonymity and is in agreement with the regulations concerning the collection and storage of patients data. The METc UMCG declares that there a no medical ethical obligations as meant in the Medical Research Involving Human Subject Act (WMO). Because we see the CONNECARE system as an experiment, observational by nature and not an intervention we do not need further feedback from our ethics department. In short, our ethics department sees this study as a means to optimize communication between different actors of the care process and therefore as an improvement of the current workflow. Also, no substantial obligatory demands are placed on the patients and users.



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Dr. Maarten Lahr	Regional project leader	UMCG
Dr. Margot Jager	Postdoctoral researcher, Embrace	UMCG
Drs. Esther Metting	Postdoctoral researcher, asthma/COPD telehealth service	UMCG
Drs. Vincent Weijers	Chief technology officer	IPHealth
Drs. Robbert van der Veen	Project manager	Bossers and Crossen

2.2 Collected Data

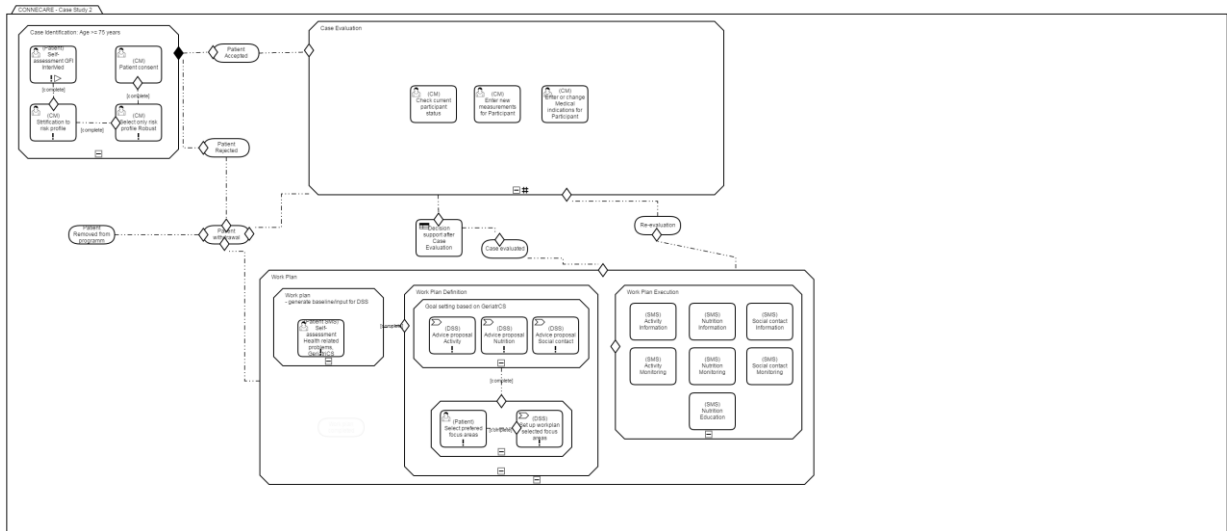
The workflow for Case Study 1 is presented as described in detail in deliverable D7.1: Evaluation Plan for the Entire Project (*Annex B. Case study 1.1: Embrace, and integrated elderly care model, and Annex B Case study 1.2: the asthma and COPD telehealth service*, and illustrating them with corresponding Case Management Model and Notation (CMMN) diagrams, as shown below, to collect the following end-user feedback from the participants.

- The following areas for improvement of current processes of elderly above the age of 75 (Embrace) of the CCP program:
 - Case identification
 - Eligibility
 - Informed consent – inclusion into the study
 - Case evaluation
 - Work plan definition
 - Work plan execution
 - Integration with community care activities.
 - Alignment with future transitional care programs.
- The following areas for improvement of current processes of the asthma and COPD telehealth service:
 - Case identification
 - Informed consent – inclusion into the study
 - Baseline case evaluation: disease severity, psychological, healthcare costs, process.
 - Work plan definition
 - Work plan execution
 - Exacerbations

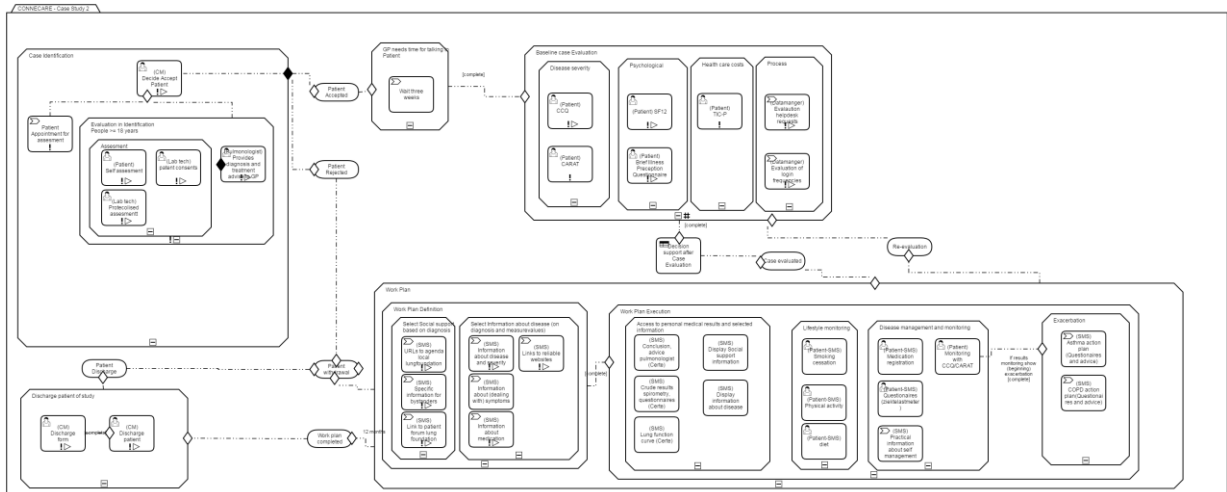


- Alignment with future transitional care programs.

CMMN of Case study 1.2: Embrace, and integrated elderly care model.



CMMN of Case study 1.2: the asthma and COPD telehealth service



2.3 Organizational Aspects

The parties involved in the CONNECARE project agree on aligning coordinated care needs of patients and older adults in the community with future digital health tools of the UMCG. Currently the UMCG is implementing an electronic patient dossier (EPD), which is expected to go live at the end of 2017. A meeting is planned during the summer with policy makers and the IT director of the UMCG. The aim of this meeting will be to discuss the current priorities and possibilities to support care coordination and integrated care at a regional level.



3. Next Steps

A new meeting will be scheduled for April.

Before, the following actions are required:

- Update CMMN diagrams
- Deliver input and discuss SACM model mock-up
- Discuss medical information items to feed into the CONNECARE system
- Discuss use of devices (type/functionalities/costs)



CONNECARE

User Document

Working Team Meeting Report

Case Study: 1 and 2

**Site: University Medical Center
Groningen**

Cycle: 7th

Date: 6/04/2017

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 04-01-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
• • CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 21-5-2017



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Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	Working Team report
Work Package	Number	2	Title	Case study 1 - UMCG – 7 th cycle – 06/04/2017

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Maarten Lahr	Email	m.m.h.lahr@umcg.nl
Partner	UMCG	Phone	+31 (0)50 3614386

Abstract	This document reports on the meeting held in Groningen (University Medical Center Groningen- UMCG) on April 6 th of 2017, regarding CONNECARE case studies 1 and 2, with the working team with clinicians of UMCG and IPHealth.
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1. Executive Summary

1.1 Objectives

The objectives of the meeting were to finalize the research protocols for CS1 and CS2, to discuss the progress made on the focus group meetings, the request for feedback on the SACM model and digital questionnaires.

The aim is to agree finalize the research protocols in order to provide specific feedback on the SACM and digital questionnaires that are going to be available in the CONNECARE system. Also we wanted to discuss the use of mobile devices for the evaluation of patients during the clinical studies.

1.2 Results

The research protocols for CS1 have been finalized. Next the elements regarding the SACM and SMS are being discussed with the IT partners. The clinical partners have provided feedback on the mock-up of het CONNECARE application, and the different interface screens that are developed for both patients and professionals. Also the clinical partners provided input on the SMS regarding the different functionalities that should be available for the patients, for instance information about the disease, access to personal medical results, help/contact with care professionals, disease management and lifestyle interventions. To this end both CS1 en CS2 developed an overview (flowchart) of all activities and functionalities that should be available in the CONNECARE app. The results of the focus groups for CS1 (Embrace) were discussed among clinical and IT partner also as input for the mock-up of the CONNECARE app. Several discussions with local IT suppliers (CS1 – asthma/COPD) have been held to discuss the IT connections that have to be made between systems. In addition, an introduction movie about the CONNECARE project and system in Dutch was developed for users.



2. Methods

2.1 Participants

Name and Surname	Role	Affiliation
Dr. Maarten Lahr	Regional project leader	UMCG
Dr. Margot Jager	Postdoctoral researcher, Embrace	UMCG
Drs. Esther Metting	Postdoctoral researcher, asthma/COPD telehealth service	UMCG
Drs. Vincent Weijers	Chief technology officer	IPHealth
Drs. Robbert van der Veen	Project manager	Bossers and Clossen
Drs. Matthijs Plas	Case manager CS2	UMCG
Prof. Erik Buskens	End responsible for project	UMCG
Drs. Hille Meetsma	CEO	IPHealth

2.2 Collected Data

The digital questionnaires that will send to patients in the CONNECARE app were discussed. All questionnaires for CS1 and 2 have been determined. Next the questionnaires were described in detail and provided in Dutch and English to the IT partners in order to set-up the SACM. The overview included all questions asked, per questionnaire, and the different answer options possible.

Also, the definitive CMMN diagrams for all case studies were defined (see below).



3. Next Steps

The next meeting will be scheduled for May.

Before, the following actions are required:

- Provide further input to the mock-up of the CONNECARE system, also based on the focus group studies.
- Provide details of all case studies regarding the proposed interventions, roles of the case managers, evaluation and follow-up of the patients.
- Deliver further input on the SACM, SMS and DSS as requested by the IT partners.



6.2 Detailed case study definitions and associated CMNN

6.2.1 Barcelona (Spain)



CONNECARE

Case Study 1 - Definition

Barcelona

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 1.1

Date: 15-06-2017



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Project officer	Hubert Schier		

Deliverable	Number	Title
Work Package	Number	Title

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input type="checkbox"/>			

Responsible Author	Isaac Cano	Email	iscano@clinic.cat
Partner	IDIBAPS	Phone	+34932275747

Abstract	<p>This document presents the process diagrams with the questionnaires and forms used in each step of CONNECARE CASE STUDY 1 processes. For each one we have added the URL to find the original definition in English or/and Spanish, if available. In case of forms defined by the clinician we have added the questions inside the document.</p>
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1. Executive Summary

This document presents the process diagrams with the questionnaires and forms used in each step of CONNECARE CASE STUDY 1 processes. For each one we have added the URL to find the original definition in English or/and Spanish, if available. In case of forms defined by the clinician we have added the questions inside the document.

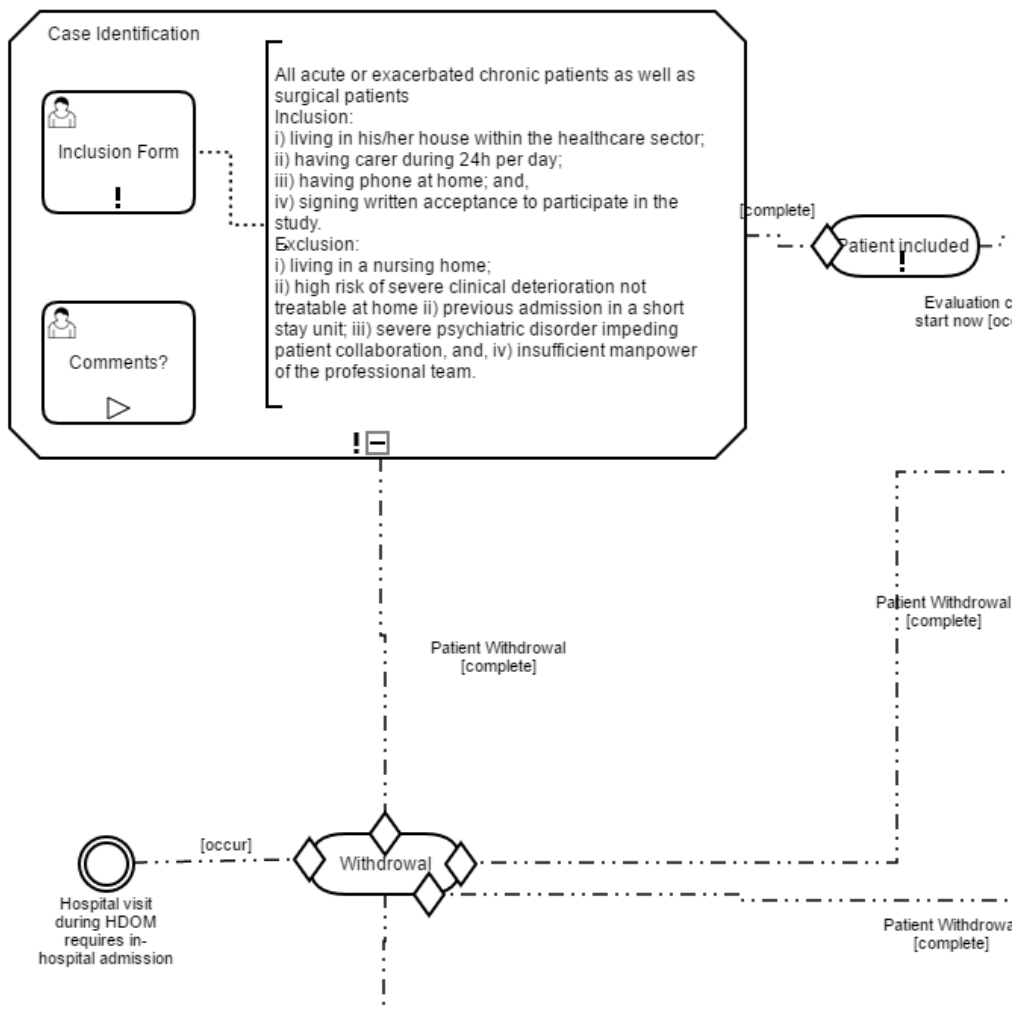
In addition to this information, we include a last section called “data collection”, containing the data dictionary of the forms.



3. Forms Description by steps

This sections presents all the forms used during the process of the CS1 in Barcelona. Some of this forms will be performed by the SACM and other by the SMS. Each form indicates the CONNECARE Subsystem responsible of each one.

3.1 Case Identification



3.1.1 Supervised Forms

3.1.1.1 Inclusion Form

Name
INCLUSION FORM
URL (ENG)



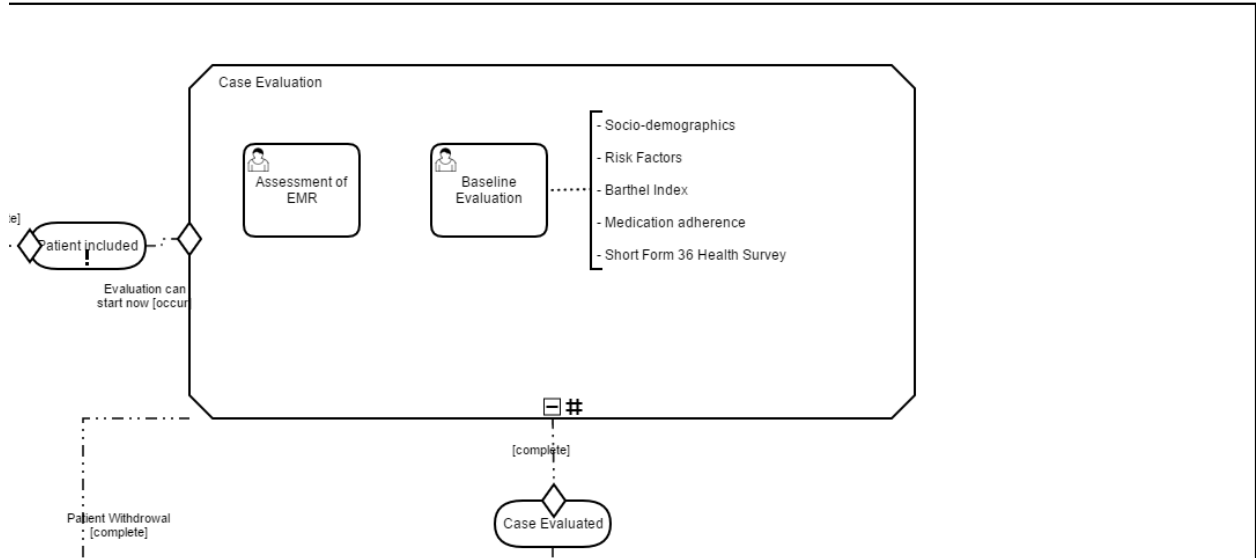
see comments
URL (ES)
see comments
Responsible
Clinician and/or Registered nurse
Comments
English
<ul style="list-style-type: none"> - Inclusion: living in his/her house within the healthcare sector (yes/no); having career during 24h per day (yes/no); having phone at home (yes/no); signing written acceptance to participate in the study (yes/no). - Exclusion: living in a nursing home (yes/no); high risk of severe clinical deterioration not treatable at home, as assessed by best medical judgment (yes/no); admission in a short stay unit (yes/no); severe psychiatric disorder (yes/no); insufficient manpower of the professional team running the program (yes/no)
Spanish
<ul style="list-style-type: none"> - Inclusión: vivir en su casa dentro del sector sanitario (sí / no); Tener cuidador durante 24h/día (sí / no); Tener teléfono en casa (sí / no); Firmar el consentimiento por escrito para participar en el estudio (sí / no). - Exclusión: residentes en un asilo de ancianos (sí / no); Alto riesgo de deterioro clínico severo no tratable en el hogar, evaluado por el mejor criterio médico (sí / no); Admisión en una unidad de corta estancia (sí / no); Trastorno psiquiátrico grave (sí / no); Personal insuficiente en el equipo profesional que ejecuta el programa (sí / no)

3.1.1.2 Patient's Consent

Name
Patient Consent
URL (ENG)
see comment
URL (ES)
see comment
Responsible
Clinician
Comments
<p>Check if the patients agreed to be treated within the process.</p> <p>The form will be provided for the hospital and customized following the corresponding ethics committee.</p>



3.2 Case Evaluation



3.2.1 Assessment of EMR

Name
Assessment of EMR
URL (ENG)
URL (ES)
Responsible
Clinician and/or Registered nurse
CONNECARE Subsystem
SACM
Comments
English
- EMR will be assessed for:
- Health care resources (free text).
- Diagnosis info (free text)
- Surgery info (free text)
- Comorbidity (Charlson index)
Spanish
- EMR será evaluado para:
- Recursos sanitarios (texto libre).
- Información de diagnóstico (Texto)
- Información de cirugía (Texto)
- Comorbilidad (Índice Charlson)



3.2.2 Baseline evaluation – Socio-demographics

Name
Socio-demographics
URL (ENG)
URL (ES)
Responsible
Anesthesiologist
CONNECARE Subsystem
SACM
Comments
From patient interviews the following information will be gathered:
English
<ul style="list-style-type: none"> ○ Demographics: <ul style="list-style-type: none"> ▪ Address (Text) ▪ Telephone (number) ▪ Age (number) ▪ Education level (not available primary school secondary school university)
Spanish
<ul style="list-style-type: none"> ○ Sociodemográficos: <ul style="list-style-type: none"> ▪ Dirección (Texto) ▪ Teléfono (número) ▪ Edad (número) ▪ Nivel educativo (no disponible Estudios primarios Estudios secundarios Estudios universitarios)

3.2.3 Baseline evaluation – Risk factors

Name
Baseline evaluation – Risk Factors
URL (ENG)
URL (ES)
Responsible
Clinician and/or Registered nurse
CONNECARE Subsystem
SACM
Comments
English
<ul style="list-style-type: none"> - Smoking pack/yr (Number) - Active smoker (Yes No) - Passive smoker (Yes No) - BMI (Number) - Sedentary lifestyle (Yes No)



- Other (Free text)

Spanish

- Cigarrillos paquetes/año (Numero)
- Fumador activo (Si | No)
- Fumador pasivo (Si | No)
- IMC (Number)
- Estilo de vida sedentario (Si | No)
- Otros (Texto libre)

3.2.4 Baseline evaluation – Barthel Index

Name
Baseline evaluation – Barthel Index
URL (ENG)
http://www.strokecenter.org/wp-content/uploads/2011/08/barthel.pdf
URL (ES)
http://www.hvn.es/enfermeria/ficheros/barthel.pdf
Responsible
Clinician and/or Registered nurse
CONNECARE Subsystem
SACM
Comments

3.2.5 Baseline evaluation – Medication Adherence

Name
Baseline evaluation – Medication Adherence – Morisky-Green questionnaire
URL (ENG)
http://www.pmidcalc.org/?sid=3945130&newtest=Y
URL (ES)
http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S0212-71992007000300009#t2
Responsible
Clinician and/or Registered nurse
CONNECARE Subsystem
SACM
Comments

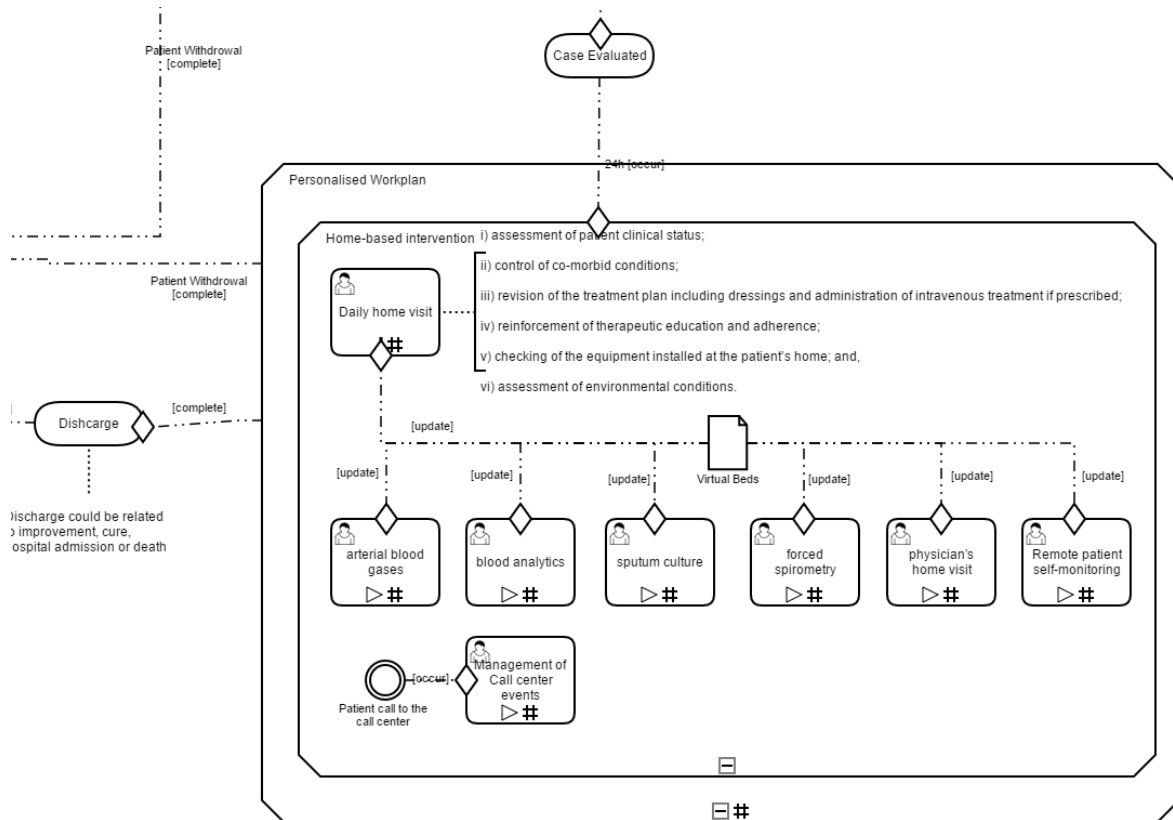
3.2.6 Baseline evaluation – SF36

Name
Baseline evaluation – SF36
URL (ENG)
https://www.rand.org/health/surveys_tools/mos/36-item-short-form/survey-instrument.html



URL (ES)
http://www.sld.cu/galerias/pdf/sitios/rehabilitacion/cuestionario_de_salud.pdf
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments

3.3 Work-plan Definition



3.3.1 Daily home visit

Name
Daily home visit
URL (ENG)
URL (ES)



Responsible
Registered nurse
CONNECARE Subsystem
SACM
Comments
English home visits include: <ul style="list-style-type: none"> - assessment of patient clinical status (free text) - control of co-morbid conditions (free text) - revision of the treatment plan including dressings and administration of intravenous treatment if prescribed (free text) - reinforcement of therapeutic education and adherence (free text) - checking of the equipment installed at the patient's home (free text) - assessment of environmental conditions (free text)
Spanish Las visitas domiciliarias incluyen: <ul style="list-style-type: none"> - evaluación del estado clínico del paciente (texto libre) - control de las co-mórbilidades (texto libre) - revisión del plan de tratamiento, incluidas curaciones y administración de tratamiento intravenoso si se prescribe (texto libre) - refuerzo de la educación y adhesión terapéutica (texto libre) - comprobación del equipo instalado en el domicilio del paciente (texto libre) - Evaluación de las condiciones ambientales (texto libre)

3.3.2 Arterial blood gases

Name
Arterial blood gases
URL (ENG)
URL (ES)
Responsible
Clinician and/or Registered nurse
CONNECARE Subsystem
SACM
Comments
English <ul style="list-style-type: none"> - Interpretation of the test results, if done (free text)
Spanish <ul style="list-style-type: none"> - Interpretación de los resultados de las pruebas, si se realiza (texto libre)

3.3.3 Blood analytics

Name
Blood analytics



URL (ENG)
URL (ES)
Responsible
Clinician and/or Registered nurse
CONNECARE Subsystem
SACM
Comments
English
- Interpretation of the test results, if done (free text)
Spanish
- Interpretación de los resultados de las pruebas, si se realiza (texto libre)

3.3.4 Sputum culture

Name
Sputum culture
URL (ENG)
URL (ES)
Responsible
Clinician and/or Registered nurse
CONNECARE Subsystem
SACM
Comments
English
- Interpretation of the test results, if done (free text)
Spanish
- Interpretación de los resultados de las pruebas, si se realiza (texto libre)

3.3.5 Forced spirometry

Name
Forced spirometry
URL (ENG)
URL (ES)
Responsible
Clinician and/or Registered nurse
CONNECARE Subsystem
SACM
Comments



English

- Interpretation of the test results, if done (free text)

Spanish

- Interpretación de los resultados de las pruebas, si se realiza (texto libre)

3.3.6 Physician's home visit

Name
Physician's home visit
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
English
<ul style="list-style-type: none"> - assessment of patient clinical status (free text) - control of co-morbid conditions (free text) - revision of the treatment plan including dressings and intravenous treatment (free text)
Spanish
<ul style="list-style-type: none"> - evaluación del estado clínico del paciente (texto libre) - control de las co-mórbilidades (texto libre) - revisión del plan de tratamiento, incluidas curaciones y tratamiento intravenoso (texto libre)

3.3.7 Remote patient self-monitoring

Name
Remote patient self-monitoring
URL (ENG)
URL (ES)
Responsible
Clinician and/or Registered nurse
CONNECARE Subsystem
SACM
Comments
English
Data interpretation from biological measuments:
<ul style="list-style-type: none"> - pulse oximeter (number) - spirometer (number) - scale (number)



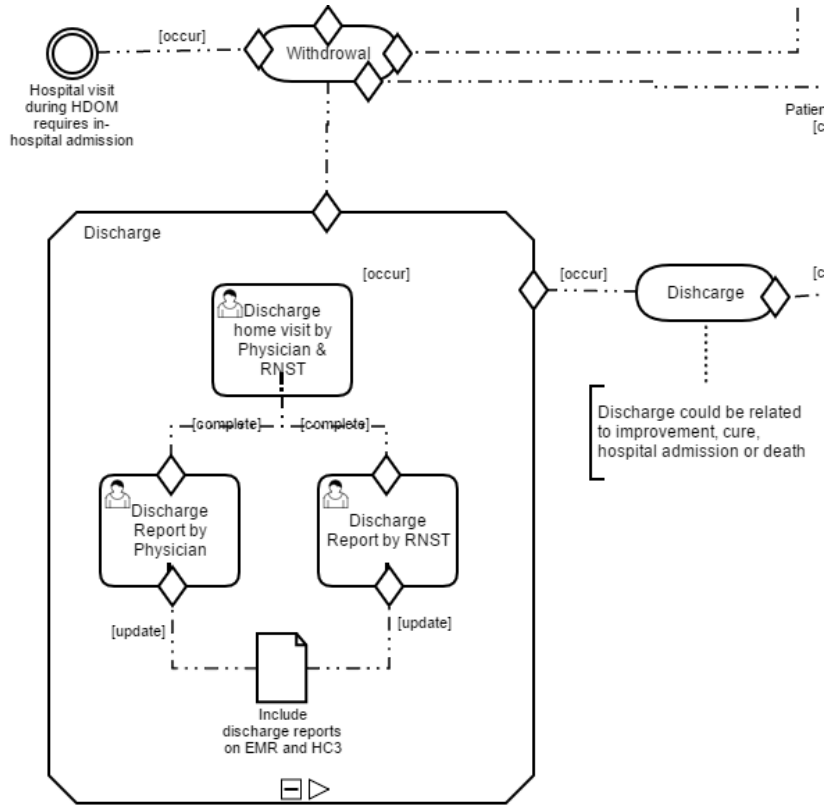
<ul style="list-style-type: none"> - glucometer (number) <p>Spanish</p> <p>Interpretación de datos de medidas biológicas:</p> <ul style="list-style-type: none"> - oxímetro de pulso (número) - espirómetro (número) - escala (número) - glucómetro (número)
--

3.3.8 Management of call center events

Name
Management of call center events
URL (ENG)
URL (ES)
Responsible
Administrative officers, Registered nurse, clinician and/or on-call physician
CONNECARE Subsystem
SACM
Comments
English
Management of different events:
<ul style="list-style-type: none"> - health issues (free text) - administrative problems (free text) - social support requests (free text)
Spanish
Gestión de diferentes eventos:
<ul style="list-style-type: none"> - cuestiones relacionadas al estado de salud (texto libre) - problemas administrativos (texto libre) - solicitudes de apoyo social (texto libre)



3.4 Discharge



3.4.1 Discharge Report by Physician

Name
Generation and delivery of the discharge report by Physician
URL (ENG)
see comments
URL (ES)
see comments
Responsible
Physician
CONNECARE Subsystem
SACM
Comments
English Discharge report (PDF)
Spanish Informe de alta (PDF)

3.4.1 Discharge Report by RNST



Name
Generation and delivery of the discharge report by RNST
URL (ENG)
see comments
URL (ES)
see comments
Responsible
RNST
CONNECARE Subsystem
SACM
Comments
English Discharge report (PDF)
Spanish Informe de alta (PDF)



CONNECARE

Case Study 2 & 3 - Definition

Barcelona

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 02

Date: 30-05-2017



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Project officer	Hubert Schier		

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Work Package	Number		Title

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input type="checkbox"/>			

Responsible Author	Isaac Cano	Email	iscano@clinic.cat
Partner	IDIBAPS	Phone	+34932275747

Abstract	<p>This document presents the process diagrams with the questionnaires and forms used in each step of CONNECARE CASE STUDY 2 & 3 processes. For each one we have added the URL to find the original definition in English or/and Spanish, if available. In case of forms defined by the clinician we have added the questions inside the document.</p>
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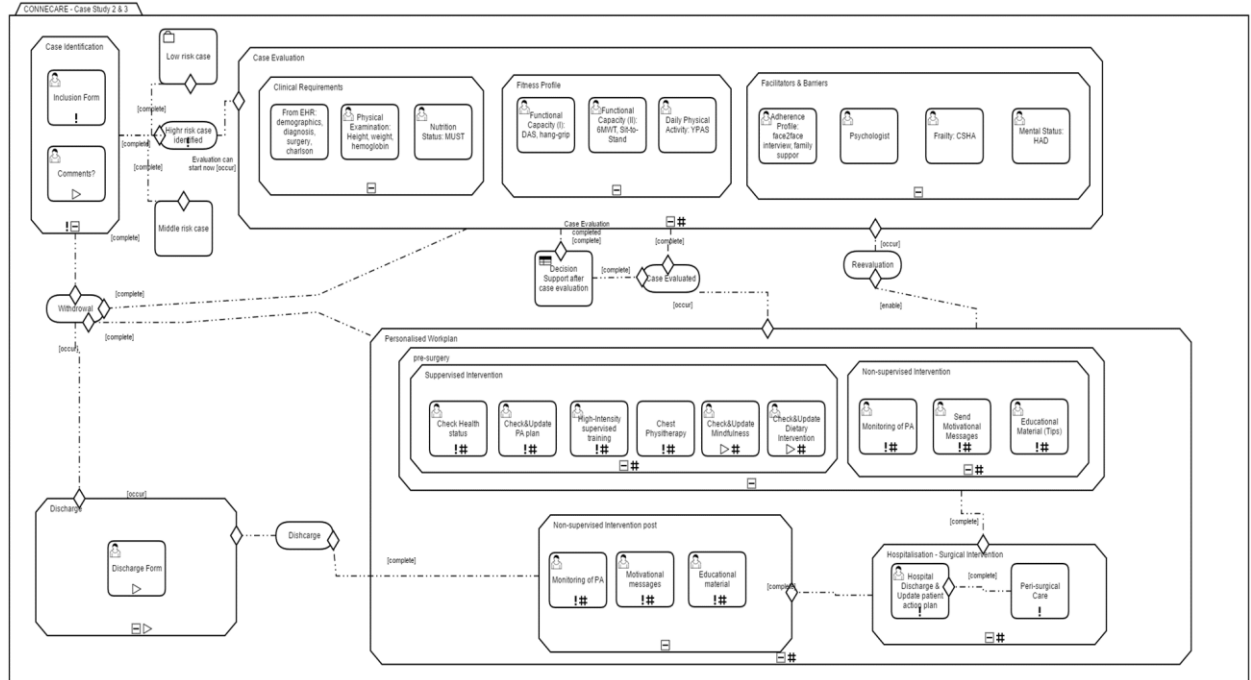
Executive Summary

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In addition to this information, we include a last section called “data collection”, containing the data dictionary of the forms.



1. Case Study Diagram

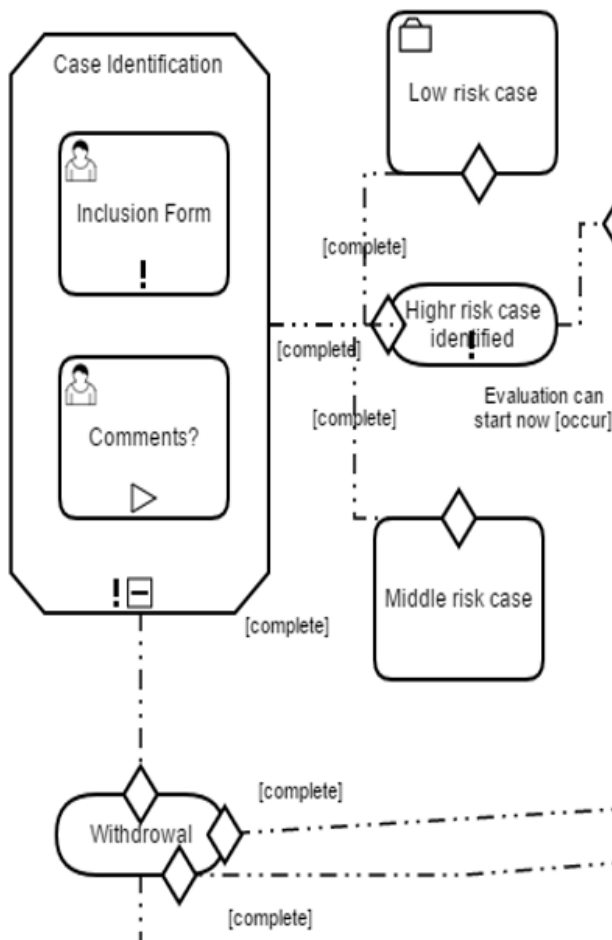




2. Forms Description by steps

This sections presents all the forms used during the process of the CS2&CS3 in Barcelona. Some of this forms will be performed by the SACM and other by the SMS. Each form indicates the CONNECARE Subsystem responsible of each one.

2.1 Case Identification



2.1.1 Supervised Forms

2.1.1.1 ASA Test

Name
American Society of Anaesthesiologists physical status classification
URL (ENG)
https://softwarecorp.es/asariskcalculator/public/calculator/en
URL (ES)
https://softwarecorp.es/asariskcalculator/public/calculator/es

Responsible
Clinician
Comments

2.1.1.2 Inclusion Form

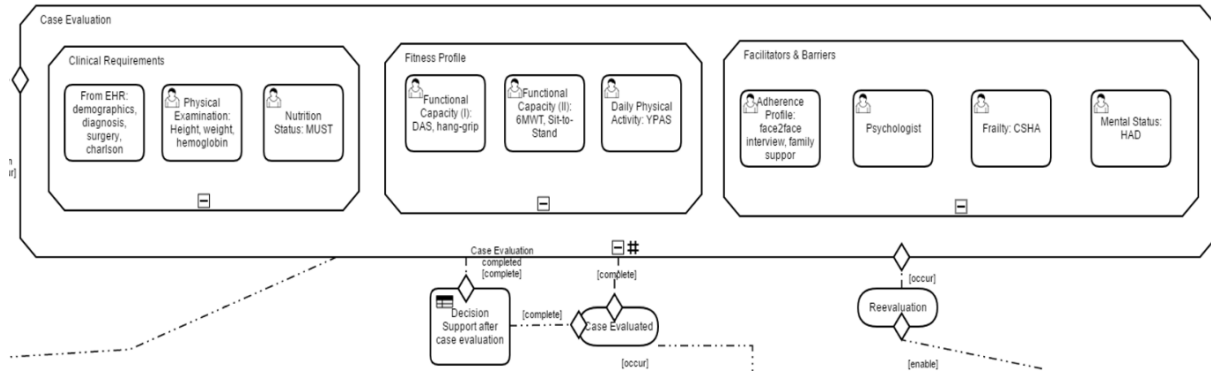
Name
INCLUSION FORM
URL (ENG)
see comments
URL (ES)
see comments
Responsible
Anesthesiologist
Comments
English <ul style="list-style-type: none"> - > 70 years (Yes No) - Major surgery of some of the following specialty: (Abdominal Gynecology Cardiovascular Urology Thorax) - High risk score (ASA 3-4) - Desired priority of the surgery: (3-4 weeks 4-8 weeks > 8 weeks) - Other causes for exclusion (Text) Spanish <ul style="list-style-type: none"> - > 70 años (Si No) - Cirugía mayor de alguna de las siguientes especialidades: (Abdominal Ginecología Cardiovascular Urología Tórax) - Nivel alto de riesgo (ASA 3-4) - Prioridad para la cirugía: (3-4 semanas 4-8 semanas > 8 semanas) - Otros posibles motivos de exclusión (Texto)

2.1.1.3 Patient's Consent

Name
Patient Consent
URL (ENG)
see comment
URL (ES)
see comment
Responsible
Clinician
Comments
<p>Check if the patients agreed to be treated within the process.</p> <p>The form will be provided for the hospital and customized following the corresponding ethics committee.</p>



2.2 Case Evaluation



2.2.1 Supervised Forms

2.2.1.1 Charlson Index

Name
Charlson Comorbidity Index
URL (ENG)
https://www.mdcalc.com/charlson-comorbidity-index-cci
URL (ES)
http://www.infodoctor.org/www/charlson.htm
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments

2.2.1.2 Socio-demographics

Name
Socio-demographics
URL (ENG)
URL (ES)
Responsible
Anesthesiologist
CONNECARE Subsystem
SACM
Comments
From the electronic health record (if available) the following information will be gathered:
English



- Demographics:
 - Address (Text)
 - Telephone (number)
 - Age (number)
 - Education level (not available | primary school | secondary school | university)
 - Diagnosis info (free text)
 - Surgery info (free text)
 - Comorbidity (Charlson index)
- Spanish**
- Sociodemográficos:
 - Dirección (Texto)
 - Teléfono (número)
 - Edad (número)
 - Nivel educativo (no disponible | Estudios primarios | Estudios secundarios | Estudios universitarios)
 - Información de diagnóstico (Texto)
 - Información de cirugía (Texto)
 - Comorbilidad (Índice Charlson)

2.2.1.3 Physical Examination

Name
Physical Examination form
URL (ENG)
See comments
URL (ES)
See comments
Responsible
Anesthesiologist
CONNECARE Subsystem
SACM
Comments
English
a. Height
b. Weight
c. Hemoglobin
Spanish
a. Altura
b. Peso
c. Hemoglobina

2.2.1.4 Nutritional status

Name
Malnutrition Universal Screening Tool (MUST) score
URL (ENG)
http://www.bapen.org.uk/screening-and-must/must-calculator
URL (ES)



See Comments below for the Spanish version.	
Responsible	
Anesthesiologist	
CONNECARE Subsystem	
SACM	
Comments	
BMI	>20 18,5-20 <18,5
Perdida de peso en los ultimos 3-6 meses (per)	<5% 5-10% >10%
Enfermedad aguda reciente y ha estado o tiene prevision de no ingesta >5 dias (enf)	NO SI

2.2.1.5 Frailty

Name	
Clinical Frailty Scale - CSHA	
URL (ENG)	
http://www.camapcanada.ca/Frailtyscale.pdf	
URL (ES)	
See Comments below for the Spanish version.	
Responsible	
Anesthesiologist	
CONNECARE Subsystem	
SACM	
Comments	
0, Activo, motivado, ejercitado 1, Bien, activos ocasionales 2, Problemas médicos bien controlados, no AF regular 3, Vulnerable, síntomas limitan actividades 4, Fragilidad leve 5, Fragilidad moderada, requiere ayuda para actividades fuera 6, Fragilidad severa, completamente dependiente 7, Fragilidad muy severa total dependencia, terminales 8, Enfermo terminal con expectativa de vida <6meses aunque no necesariamente dependiente	

2.2.1.6 Mental Status

Name	
Hospital Anxiety and Depression (HAD) scale	
URL (ENG)	
http://www.scalesandmeasures.net/files/files/HADS.pdf	
URL (ES)	
http://www.guiasalud.es/egpc/ansiedad/completa/documentos/anexos/Anexo2_Intrumentos%20de%20medida.pdf	
Responsible	
Anesthesiologist	
CONNECARE Subsystem	
SACM	
Comments	



2.2.1.7 Functional capacity - DUKE

Name	
Duke Activity Status Index	
URL (ENG)	
https://www.mdcalc.com/duke-activity-status-index-dasi	
URL (ES)	
See Comments below for the Spanish version.	
Responsible	
Anesthesiologist	
CONNECARE Subsystem	
SACM	
Comments	
¿Valerse por si solo, vestirse, asearse?	NO SI
¿Caminar por su casa?	NO SI
¿Caminar unos 2km sobre llano (sin pendiente)?	NO SI
¿Subir un tramo de escalera o caminar sobre una pendiente moderada?	NO SI
¿Correr una distancia corta?	NO SI
¿Realizar trabajos de casa suaves como sacar el polvo, lavar platos?	NO SI
¿Pasar el aspirador, barrer, llevar compra ligera?	NO SI
¿Arreglar el jardín, mover muebles pesados?	NO SI
¿Bicicleta sobre llano, caminar con marcha ligera, empujar?	NO SI
¿Tener relaciones sexuales?	NO SI
¿Bailar, golf, tenis dobles, nadar?	NO SI
¿Ejercicio intenso como esquiar, squash, pádel, tenis simple, bicicleta de montaña?	NO SI

2.2.1.8 Functional capacity – Hand Grip

Name	
Hand-grip	
URL (ENG)	
http://www.topendsports.com/testing/tests/handgrip.htm	
URL (ES)	
See Comments below for the Spanish version.	
Responsible	
Anesthesiologist	



CONNECARE Subsystem
SACM
Comments
<ul style="list-style-type: none"> • Mano Dominante • Medicion 1 • Medicion 2 • Medicion 3 • Mano No Dominante • Medicion 1 • Medicion 2 • Medicion 3

2.2.1.9 Functional capacity – 6MWT

Name
6-minute walk test
URL (ENG)
http://www.cscce.unc.edu/spir/public/UNLICOMMSMWSixMinuteWalkTestFormQxQ08252011.pdf
URL (ES)
http://www.aamr.org.ar/secciones/fisiopatologia_lab_pulmonar/prueba6minut.doc
Responsible
Anesthesiologist
CONNECARE Subsystem
SACM
Comments

2.2.1.10 Functional capacity – Sit-to-stand

Name
30 second sit to stand test
URL (ENG)
http://www.rehabmeasures.org/Lists/RehabMeasures/DispForm.aspx?ID=1122
URL (ES)
See Comments below for the Spanish version
Responsible
Anesthesiologist
CONNECARE Subsystem
SACM
Comments
<ul style="list-style-type: none"> • Basal FC (number) • Basal SpO2 (number) • Basal Borg Disnea (number) • Basal Borg EEII (number) • Final FC (number) • Final SpO2 (number) • Final Borg Disnea (number) • Final Borg EEII (number) • Numero de repeticiones (number)



- ¿Ha necesitado el paciente pararse? (No | Si)

2.2.1.11 YPAS

Name
Yale Physical Activity Score (YPAS) questionnaire
URL (ENG)
http://dapa-toolkit.mrc.ac.uk/documents/en/Yal/Yale_Physical_Activity_Survey.pdf
URL (ES)
https://static-content.springer.com/esm/art%3A10.1186%2F1471-2474-15-120/MediaObjects/12891_2013_2434_MOESM1_ESM.pdf
Responsible
Physiotherapist
CONNECARE Subsystem
SACM
Comments

2.2.1.12 Adherence profile

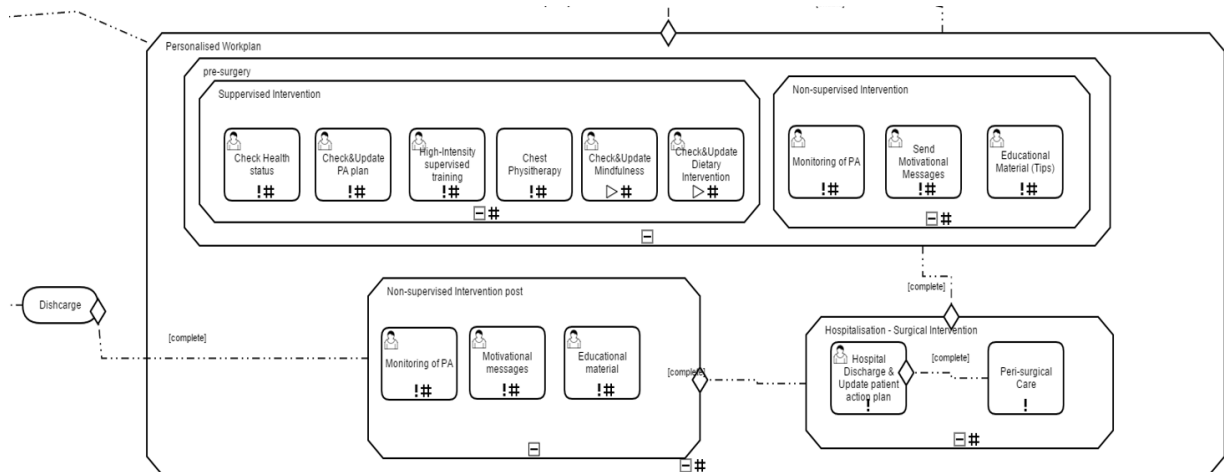
Name
Face-to-face motivational interview to detect barriers and facilitators of the patient to be physically active
URL (ENG)
See comments
URL (ES)
See comments
Responsible
Physiotherapist
CONNECARE Subsystem
SACM
Comments
<p>English</p> <p>Does the patient have family/social support? (Appropriate Willing to help non appropriate)</p> <p>Name of the family/social support (Text)</p> <p>Contact of the family/social support (Text)</p> <p>Is the patients willing to participate in the initial mindfulness session? (Yes No)</p> <p>Spanish</p> <p>¿Dispone de soporte familiar/social? (Apropiado Disposición a ayudar no apropiado)</p> <p>Nombre de la persona de soporte (Texto)</p> <p>Información de contacto de la persona de soporte (Texto)</p> <p>¿Participará en la sesión inicial de evaluación psicológica? (Si No)</p>



2.2.1.13 Psychologist

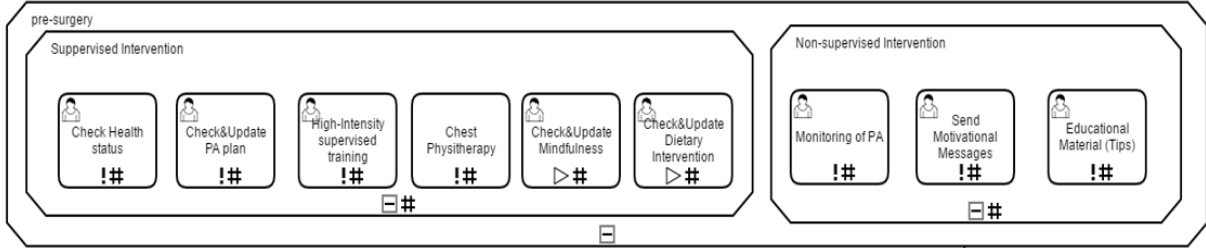
Name
Face-to-face motivational interview to detect barriers and facilitators of the patient to be physically active
URL (ENG)
See comments
URL (ES)
See comments
Responsible
Psychologist
CONNECARE Subsystem
SACM
Comments
English Attendance to the initial evaluation session: Yes/No
Spanish ¿Atenderá a la sesión inicial de evaluación? Si No

2.3 Work-plan Definition





2.3.1 Pre-surgery



2.3.1.1 Check Health Status

Name
Result of the face-to-face meeting to check health status
URL (ENG)
See comments
URL (ES)
See comments
Responsible
Anesthesiologist
CONNECARE Subsystem
SACM
Comments
English
Conclusion of the face to face health status follow-up meeting (Text)
Spanish
Resultado de la sesión presencial para el seguimiento del estado de salud del paciente (Texto)

2.3.1.2 Check & update Physical Activity (PA) plan

Name
Check & update PA plan
URL (ENG)
See comments
URL (ES)
See comments
Responsible
Physiotherapist
CONNECARE Subsystem
SMS
Comments
English
New daily steps objective (Number)
Reported Physical activity from pedometer (Number)
Place where the physical activity is performed (Home Community Hospital)
Conclusion of the face to face physical activity follow-up meeting (Text)

Spanish

Nuevo Objetivo diario de pasos (número)
 Actividad física reportado por el usuario (podómetro) (número)
 Lugar donde realizar la actividad física (En casa | En la comunidad | Consultas externas)
 Resultado de la sesión presencial para el seguimiento de la actividad física. (Text)

2.3.1.3 High intensity supervised training

Name
Report on high intensity supervised training sessions and use of the session for patient education regarding the use of ICT
URL (ENG)
see comments
URL (ES)
see comments
Responsible
Physiotherapist
CONNECARE Subsystem
SACM
Comments
English Conclusion of the face rehabilitation and use of ICT meeting (Text)
Spanish Resultado de la sesión presencial de rehabilitación y uso de las TIC (Texto)

2.3.1.4 Chest Physiotherapy

Name
Report on chest physiotherapy sessions
URL (ENG)
see comments
URL (ES)
see comments
Responsible
Physiotherapist
CONNECARE Subsystem
SACM
Comments
English Conclusion of the chest physiotherapy session (Text)
Spanish Resultado de la sesión presencial de rehabilitación abdominal (Texto)

2.3.1.5 Mindfulness





Name
Specific psychological intervention (“mindfulness”)
URL (ENG)
URL (ES)
Responsible
Psychologist
CONNECARE Subsystem
SACM
Comments
English
Does the patient attend to the appointment (Yes No)
Does the patient family/social support to the appointment (Yes No)
Outcome of the face to face mindfulness session. (Text)
Spanish
¿Atiende el paciente a la sesión? Si No
¿Atiende el soporte social/familiar a la sesión? Si No
Resultado de la sesión presencial de mindfulness. (Texto)

2.3.1.6 Dietary intervention

Name
Specific dietary interventions if MUST score ≥ 2
URL (ENG)
see comments
URL (ES)
see comments
Responsible
Nutritionist
CONNECARE Subsystem
SACM
Comments
English
Outcome of the face to face nutritional status follow-up session (Text)
Nutritional status reported by the patient – Optional (Text)
Spanish
Resultado de la sesión presencial para el seguimiento del estado nutricional (Texto)
Estado nutricional reportado por el usuario – Opcional (Texto)

2.3.1.7 Monitoring of PA

Name
Patient monitoring of PA
URL (ENG)
see comments
URL (ES)
see comments



Responsible
Patient
CONNECARE Subsystem
SMS
Comments
<p>The data will be sent to the SMS which is the responsible to manage prescriptions and the patient's results.</p> <p>The data need to prescribe physical activity is:</p> <p>English</p> <ul style="list-style-type: none"> • Start date. • End date. • Number of steps daily. • Intensity of the activity. <ul style="list-style-type: none"> ○ Minutes of low level activity daily. ○ Minutes of medium level activity daily. ○ Minutes of high level activity daily. • Max. minutes without activity allowed daily. <p>Spanish</p> <ul style="list-style-type: none"> • Fecha inicio. • Fecha fin. • Número de pasos al día. • Intensidad de la actividad. <ul style="list-style-type: none"> ○ Minutos diarios de actividad de baja intensidad. ○ Minutos diarios de actividad de moderada intensidad. ○ Minutos diarios de actividad de alta intensidad. • Número máximo de minutos sin actividad permitidos.

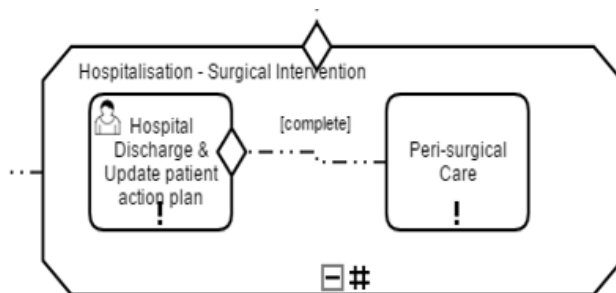
2.3.1.8 *Motivational messaging*

Name
Send motivational messages to the patients
URL (ENG)
see comments
URL (ES)
see comments
Responsible
Physiotherapist
CONNECARE Subsystem
SMS
Comments
<p>English</p> <p>Motivational messaging mode (Personalized Predefined)</p> <p>Predefined Motivational message (Dropdown list of predefined messages)</p> <p>Personalized Motivational message (Text)</p> <p>Spanish</p> <p>Modo de mensaje motivacional (Personalizado Predefinido)</p> <p>Mensaje motivacional predefinido (Desplegable con mensajes predefinidos)</p> <p>Mensaje motivacional personalizado (Texto)</p>

2.3.1.9 Educational material

Name
Send educational material to the patients
URL (ENG)
see comments
URL (ES)
see comments
Responsible
Clinicians
CONNECARE Subsystem
SMS
Comments
English
Educational material mode (Personalized Predefined)
Predefined educational material (Dropdown list of predefined educational material)
Personalized educational material (pdf files)
Spanish
Modo de mensaje motivacional (Personalizado Predefinido)
Mensaje motivacional predefinido (Desplegable con paquetes predefinidos de material educativo)
Mensaje motivacional personalizado (Texto)

2.3.2 Hospitalization – surgical intervention



2.3.2.1 Peri-surgical care

Name
Clinical notes of peri-surgical care needs
URL (ENG)
See comments
URL (ES)
See comments
Responsible
Anesthesiologist
CONNECARE Subsystem

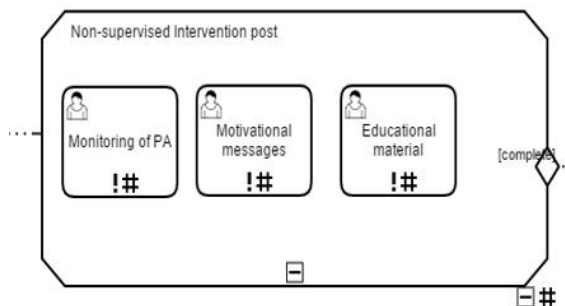


SACM
Comments
English Report on patient’s peri-surgical care (Plain text Pdf)
Spanish Nota clínica sobre los cuidados peri-quirúrgicos (Texto Pdf)

2.3.2.2 Hospital Discharge

Name
Hospital discharge report with recommendation to update the patient action plan, including promotion of PA
URL (ENG)
see comments
URL (ES)
see comments
Responsible
Anesthesiologist
CONNECARE Subsystem
SACM
Comments
English Discharge report (Plain text Pdf)
Spanish Informe de alta con recomendaciones para la actualización del plan de cuidados del paciente, incluyendo la promoción de actividad física (Texto PDF)

2.3.3 Post surgery



2.3.3.1 Monitoring of PA

Name
Patient monitoring of PA
URL (ENG)



see comments
URL (ES)
see comments
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
The data will be sent to the SMS which is the responsible to manage prescriptions and the patient's results. The data need to prescribe physical activity is:
English
<ul style="list-style-type: none"> • Start date. • End date. • Number of steps daily. • Intensity of the activity. <ul style="list-style-type: none"> ○ Minutes of low level activity daily. ○ Minutes of medium level activity daily. ○ Minutes of high level activity daily. • Max. minutes without activity allowed daily.
Spanish
<ul style="list-style-type: none"> • Fecha inicio. • Fecha fin. • Número de pasos al día. • Intensidad de la actividad. <ul style="list-style-type: none"> ○ Minutos diarios de actividad de baja intensidad. ○ Minutos diarios de actividad de moderada intensidad. ○ Minutos diarios de actividad de alta intensidad. • Número máximo de minutos sin actividad permitidos.

2.3.3.2 Motivational messaging

Name
Send motivational messages to the patients
URL (ENG)
see comments
URL (ES)
see comments
Responsible
Physiotherapist
CONNECARE Subsystem
SMS
Comments
English
Motivational messaging mode (Personalized Predefined)
Predefined Motivational message (Dropdown list of predefined messages)
Personalized Motivational message (Text)
Spanish
Modo de mensaje motivacional (Personalizado Predefinido)

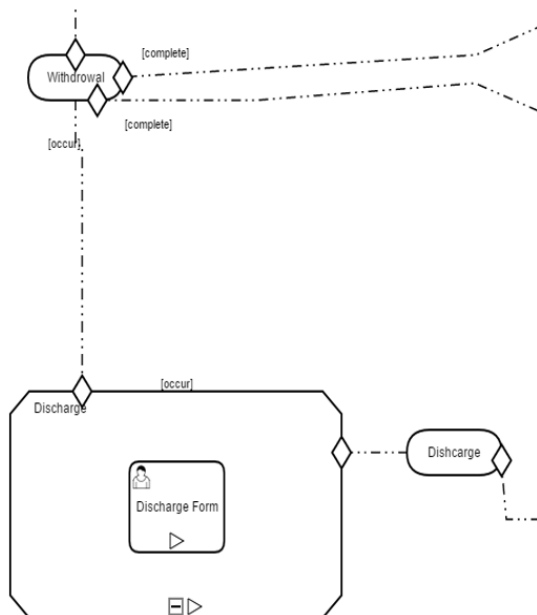


Mensaje motivacional predefinido	(Desplegable con mensajes predefinidos)
Mensaje motivacional personalizado	(Texto)

2.3.3.3 Educational material

Name
Send educational material to the patients
URL (ENG)
see comments
URL (ES)
see comments
Responsible
Clinicians
CONNECARE Subsystem
SMS
Comments
English
Educational material mode (Personalized Predefined)
Predefined educational material (Dropdown list of predefined educational material)
Personalized educational material (pdf files)
Spanish
Modo de mensaje motivacional (Personalizado Predefinido)
Mensaje motivacional predefinido (Desplegable con paquetes predefinidos de material educativo)
Mensaje motivacional personalizado (Texto)

2.4 Discharge





2.4.1 Supervised Forms

2.4.1.1 Discharge Form

Name
Generation and delivery of the discharge report
URL (ENG)
see comments
URL (ES)
see comments
Responsible
Anaesthesiologist
CONNECARE Subsystem
SACM
Comments
English Discharge report (PDF)
Spanish Informe de alta (PDF)



3. Data Collection

3.1 Case identification

Variable Name	Form Name	Section Header	Field Type	Field Label	Choices / calculations
morethan70	Case identification	Identification of candidates	radio	> 70 años	0, NO 1, SI
cir_prev	Case identification		dropdown	Cirugia prevista	0, cap 1, abdominal 2, Gynecology 3, cardiovascular 4, Urology 5, Thorax
asa	Case identification		dropdown	ASA	0, 1 1, 2 2, 3 3, 4
priority	Case identification		radio	Prioridad de la cirugia	0, < 4 semanas 1, 4-8 semanas 2, > 8 semanas
mintimegap	Case identification		radio	Se dispone de mínimo 3-4 semanas?	0, Si 1, No
otherexcl	Case identification		text	Otras causas de la exclusión	

3.2 Case evaluation

Variable Name	Form Name	Section Header	Field Type	Field Label	Choices / calculations
street	Case evaluation - Demographics	Socio-demographics	text	Domicilio	
telf	Case evaluation - Demographics		text	Teléfono	
age	Case evaluation - Demographics		text	Edad	
education	Case evaluation - Demographics		dropdown	Educación	0, no disponible 1, Estudios primarios 2, Estudios secundarios



					3, Estudios universitarios
diagnosisinfo	Case evaluation - Diagnosis		text	Información respecto al diagnóstico	
surgeryinfo	Case evaluation - Surgery		text	Información respecto a la cirugía	
ch1	Case evaluation - Comorbidity	Charlson Comorbidity Index	radio	Myocardial infarct	0, No 1, Yes
ch2	Case evaluation - Comorbidity		radio	Congestive heart failure	0, No 1, Yes
ch3	Case evaluation - Comorbidity		radio	Peripheral vascular disease	0, No 1, Yes
ch4	Case evaluation - Comorbidity		radio	Cerebrovascular disease (except hemiplegia)	0, No 1, Yes
ch5	Case evaluation - Comorbidity		radio	Dementia	0, No 1, Yes
ch6	Case evaluation - Comorbidity		radio	Chronic pulmonary disease	0, No 1, Yes
ch7	Case evaluation - Comorbidity		radio	Connective tissue disease	0, No 1, Yes
ch8	Case evaluation - Comorbidity		radio	Ulcer disease	0, No 1, Yes
ch9	Case evaluation - Comorbidity		radio	Mild liver disease	0, No 1, Yes
ch10	Case evaluation - Comorbidity		radio	Diabetes (without complications)	0, No 1, Yes
ch11	Case evaluation - Comorbidity		radio	Diabetes with end organ damage	0, No 1, Yes
ch12	Case evaluation - Comorbidity		radio	Hemiplegia	0, No 1, Yes

ch13	Case evaluation - Comorbidity		radio	Moderate or severe renal disease	0, No 1, Yes
ch14	Case evaluation - Comorbidity		radio	Solid tumor (non metastatic)	0, No 1, Yes
ch15	Case evaluation - Comorbidity		radio	Leukemia	0, No 1, Yes
ch16	Case evaluation - Comorbidity		radio	Lymphoma, Multiple myeloma	0, No 1, Yes
ch17	Case evaluation - Comorbidity		radio	Moderate or severe liver disease	0, No 1, Yes
ch18	Case evaluation - Comorbidity		radio	Metastatic solid tumor	0, No 1, Yes
ch19	Case evaluation - Comorbidity		radio	AIDS	0, No 1, Yes
ch20	Case evaluation - Comorbidity		radio	Age 50-59	0, No 1, Yes
ch21	Case evaluation - Comorbidity		radio	Age 60-69	0, No 1, Yes
ch22	Case evaluation - Comorbidity		radio	Age 70-79	0, No 1, Yes
ch23	Case evaluation - Comorbidity		radio	Age 80-89	0, No 1, Yes
ch24	Case evaluation - Comorbidity		radio	Age 90-99	0, No 1, Yes
ch25	Case evaluation - Comorbidity		calc	Charlson Comorbidity Index	sum([ch1]*1, [ch2]*1, [ch3]*1, [ch4]*1, [ch5]*1, [ch6]*1, [ch7]*1, [ch8]*1, [ch9]*1, [ch10]*1, [ch11]*2, [ch12]*2, [ch13]*2, [ch14]*2, [ch15]*2, [ch16]*2, [ch17]*3, [ch18]*6, [ch19]*6, [ch20]*1, [ch21]*2, [ch22]*3, [ch23]*4, [ch24]*5)
weight	Case evaluation - Physical Examination	Physical Examination	text	Peso	



height	Case evaluation – Physical Examination		text	Altura	
hemo	Case evaluation – Physical Examination		text	Hemoglobina	
bmi	Case evaluation – Nutritional Status	Malnutrition Universal Screening Tool (MUST)	radio	BMI	0, >20 1, 18,5-20 2, <18,5
perdi	Case evaluation – Nutritional Status		radio	Perdida de peso en los ultimos 3-6 meses	0, <5% 1, 5-10% 2, >10%
enf	Case evaluation – Nutritional Status		radio	Enfermedad aguda reciente y ha estado o tiene prevision de no ingesta >5 dias	0, NO 1, SI
tscm	Case evaluation – Nutritional Status		calc	Total score	sum([bmi],[per],[enf]*2)
cscha	Case evaluation - Frailty	Clinical Frailty Scale	radio	CSHA	0, Activo, motivado, ejercitado 1, Bien, activos ocasionales 2, Problemas medicos bien controlados, no AF regular 3, Vulnerable, sintomas limitan actividades 4, Fragilidad leve 5, Fragilidad moderada, requiere ayuda para actividades fuera 6, Fragilidad severa, completamente dependiente 7, Fragilidad muy severa total dependencia, terminales 8, Enfermo terminal con expectativa de vida <6meses aunque no necesariamente dependiente
had1	Case evaluation – Mental Status	Hospital Anxiety and Depression (HAD)	dropdown	1. Me siento tenso o nervioso	0, Nunca 1, A veces 2, Muchas veces 3, Todos los dias
had2	Case evaluation – Mental Status		dropdown	2. Todavia disfruto con lo que antes me gustaba	0, Como siempre 1, No lo bastante 2, Solo un poco 3, Nada

had3	Case evaluation – Mental Status		dropdown	3. Tengo una sensacion de miedo, como si algo horrible me fuera a suceder.	0, Nada 1, Un poco, pero no me preocupa 2, Si, pero no es muy fuerte 3, Definitivamente y es muy fuerte
had4	Case evaluation – Mental Status		dropdown	4. Puedo reirme y ver el lado divertido de las cosas.	0, Al igual que siempre lo hice 1, No tanto ahora 2, Casi nunca 3, Nunca
had5	Case evaluation – Mental Status		dropdown	5. Tengo mi mente llena de preocupaciones.	0, Solo en ocasiones 1, A veces, aunque no muy a menudo 2, Con bastante frecuencia 3, La mayoría de las veces
had6	Case evaluation – Mental Status		dropdown	6. Me siento alegre.	0, Casi siempre 1, A veces 2, No muy a menudo 3, Nunca
had7	Case evaluation – Mental Status		dropdown	7. Puedo estar sentado confortablemente y sentirme relajado.	0, Siempre 1, Por lo general 2, No muy a menudo 3, Nunca
had8	Case evaluation – Mental Status		dropdown	8. Me siento como si cada dia estuviera mas lento.	0, Nunca 1, A veces 2, Muy a menudo 3, Por lo general, en todo momento
had9	Case evaluation – Mental Status		dropdown	9. Tengo una sensacion extrana, como si tuviera mariposasen el estomago.	0, El Nunca 1, En ciertas ocasiones 2, Con bastante frecuencia 3, Muy a menudo
had10	Case evaluation – Mental Status		dropdown	10. He perdido interes en mi aspecto personal.	0, Me preocupo al igual que siempre 1, Podria tener un poco mas de cuidado 2, No me preocupo tanto como debiera 3, Totalmente
had11	Case evaluation – Mental Status		dropdown	11. Me siento inquieto, como si no pudiera parar demoverme.	0, Nada 1, No mucho 2, Bastante 3, Mucho
had12	Case evaluation – Mental Status		dropdown	12. Me siento optimista respecto al futuro.	0, Igual que siempre 1, Menos de lo que acostumbraba 2, Mucho menos de lo que acostumbraba 3, Nada



had13	Case evaluation – Mental Status		dropdown	13. Me asaltan sentimientos repentinos de panico.	0, Rara vez 1, No muy a menudo 2, Bastante a menudo 3, Muy frecuentemente
had14	Case evaluation – Mental Status		dropdown	14. Me divierto con un buen libro, la radio, o un programa de television.	0, menudo 1, A veces 2, No muy a menudo 3, Rara vez
had15	Case evaluation – Mental Status		calc	HAD_Anxiety	sum([had1], [had3], [had5], [had7], [had9], [had11], [had13])
had16	Case evaluation – Mental Status		calc	HAD_Depression	sum([had2], [had4], [had6], [had8], [had10], [had12], [had14])
had17	Case evaluation – Mental Status		calc	HAD_TotalScore	sum([had15], [had16])
vale	Case evaluation – Functional Capacity (I)	Duke Activity Status Index (DASI)	radio	¿Valerse por si solo, vestirse, asearse?	0, NO 1, SI
cam	Case evaluation – Functional Capacity (I)		radio	¿Caminar por su casa?	0, NO 1, SI
camu	Case evaluation – Functional Capacity (I)		radio	¿Caminar unos 2km sobre llano (sin pendiente)?	0, NO 1, SI
sub	Case evaluation – Functional Capacity (I)		radio	¿Subir un tramo de escalera o caminar sobre una pendiente moderada?	0, NO 1, SI
corre	Case evaluation – Functional Capacity (I)		radio	¿Correr una distancia corta?	0, NO 1, SI
real	Case evaluation – Functional Capacity (I)		radio	¿Realizar trabajos de casa suaves como sacar el polvo, lavar platos?	0, NO 1, SI
pasa	Case evaluation – Functional Capacity (I)		radio	¿Pasar el aspirador, barrer, llevar compra ligera?	0, NO 1, SI



arreg	Case evaluation – Functional Capacity (I)		radio	Arreglar el jardin, mover muebles pesados	0, NO 1, SI
bici	Case evaluation – Functional Capacity (I)		radio	Bicicleta sobre llano, caminar con marcha ligera, empujar	0, NO 1, SI
tene	Case evaluation – Functional Capacity (I)		radio	Tener relaciones sexuales	0, NO 1, SI
bail	Case evaluation – Functional Capacity (I)		radio	Bailar, golf, tenis dobles, nadar	0, NO 1, SI
ejerin	Case evaluation – Functional Capacity (I)		radio	¿Ejercicio intenso como esquiar, squash, padel, tenis simple, bicicleta de montana ?	0, NO 1, SI
scrt	Case evaluation – Functional Capacity (I)		calc	Score total	sum([vale]*2.75, [cam]*1.75, [camu]*2.75, [sub]*5.5, [corre]*8, [real]*2.7, [pasa]*3.5, [arreg]*8, [bici]*4.5, [tene]*5.25, [bail]*6, [ejerin]*7.5)
hagr2	Case evaluation – Functional Capacity (I)	Hand grip	radio	Mano Dominante	0, Derecha 1, Izquierda
hagr3	Case evaluation – Functional Capacity (I)		text	Medicion 1	
hagr4	Case evaluation – Functional Capacity (I)		text	Medicion 2	
hagr5	Case evaluation – Functional Capacity (I)		text	Medicion 3	



hagr6	Case evaluation – Functional Capacity (I)		radio	Mano No Dominante	0, Derecha 1, Izquierda
hagr7	Case evaluation – Functional Capacity (I)		text	Medicion 1	
hagr8	Case evaluation – Functional Capacity (I)		text	Medicion 2	
hagr9	Case evaluation – Functional Capacity (I)		text	Medicion 3	
distance	Case evaluation - Functional Capacity (II)	Six minute walking test	text	Distancia	
baselina_hr	Case evaluation - Functional Capacity (II)		text	Frecuencia cardiaca inicial	
final_hr	Case evaluation - Functional Capacity (II)		text	Frecuencia cardiaca final	
baseline_sato	Case evaluation - Functional Capacity (II)		text	Saturacion de oxigeno inicial	
final_sato	Case evaluation - Functional Capacity (II)		text	Saturacion de oxigeno final	
baseline_dyspnea	Case evaluation - Functional Capacity (II)		text	Disnea inicial	
final_dyspnea	Case evaluation - Functional Capacity (II)		text	Disnea final	



baseline_fati	Case evaluation - Functional Capacity (II)		text	Fatiga inicial	
final_fati	Case evaluation - Functional Capacity (II)		text	Fatiga final	
hrr1	Case evaluation - Functional Capacity (II)		text	HRR1	
stops	Case evaluation - Functional Capacity (II)		dropdown	¿Ha necesitado el paciente pararse?	0, No 1, Si
num_stops	Case evaluation - Functional Capacity (II)		text	Numero de paradas	
tim_par	Case evaluation - Functional Capacity (II)		text	Tiempo de las paradas	
cap1	Case evaluation - Functional Capacity (II)	Sit-to-stand (30 seg)	text	Basal FC	
cap2	Case evaluation - Functional Capacity (II)		text	Basal SpO2	
cap3	Case evaluation - Functional Capacity (II)		text	Basal Borg Disnea	
cap4	Case evaluation - Functional Capacity (II)		text	Basal Borg EEII	
cap5	Case evaluation - Functional Capacity (II)		text	Final FC	



cap6	Case evaluation - Functional Capacity (II)		text	Final SpO2	
cap7	Case evaluation - Functional Capacity (II)		text	Final Borg Disnea	
cap8	Case evaluation - Functional Capacity (II)		text	Final Borg EEII	
chte	Case evaluation - Functional Capacity (II)		text	Numero de repeticiones	
stops2	Case evaluation - Functional Capacity (II)		dropdown	¿Ha necesitado el paciente pararse?	0, No 1, Si
dipme	Case evaluation - Daily Life Activity	Yale Physical Activity Score (YPAS)	radio	¿Aproximadamente cuantas veces durante el ultimo mes ha participado en actividades intensas que duraron al menos 10 minutos, y provocaron importantes aumentos en su respiracion, pulso, cansancio de piernas o le hacían sudar?	0, nunca 1, 1-3 veces por mes 2, 1-2 veces por semana 3, 3-4 veces por semana 4, >5 veces por semana
ti	Case evaluation - Daily Life Activity		radio	¿Aproximadamente durante cuanto tiempo realizo cada vez esta actividad vigorosa?	0, 10-30 min 1, 31-60 min 2, >60 min
sdipme	Case evaluation - Daily Life Activity		calc	Score actividad fisica intensa dias por mes	[dipme]
sti	Case evaluation - Daily Life Activity		calc	Score actividad fisica intensa tiempo	if ([ti] = 0, 1, if ([ti] = 1, 2, 3))



sactfi	Case evaluation - Daily Life Activity		calc	YPAS indice Act Vigorosa	[sdipme]*[sti]*5
pdipme	Case evaluation - Daily Life Activity		radio	¿Piense en los paseos que ha realizado durante el ultimo mes. Aproximadamente cuantas veces al mes fue a pasear al menos 10 minutos o más sin parar pero que no fue suficiente para causar grandes incrementos en la respiración, pulso, cansancio de piernas ni le hacía sudar?	0, nunca 1, 1-3 veces por mes 2, 1-2 veces por semana 3, 3-4 veces por semana 4, >5 veces por semana
pti	Case evaluation - Daily Life Activity		radio	¿Cuando fue a pasear asi, durante cuantos minutos camino?	0, 10-30 min 1, 31-60 min 2, >60 min
psdipme	Case evaluation - Daily Life Activity		calc	Score Paseos días por mes	[pdipme]
psti	Case evaluation - Daily Life Activity		calc	Score Paseos tiempo	if ([pti] = 0, 1, if ([pti] = 1, 2, 3))
spas	Case evaluation - Daily Life Activity		calc	YPAS indice Pasear	[psdipme]*[psti]*3
tiemov	Case evaluation - Daily Life Activity		radio	Aproximadamente cuantas horas al dia pasa moviendose de un lado a otro mientras hace cosas? (Por favor, insistir sobre el tiempo realmente en movimiento)	0, ninguna 1, <1h dia 2, de 1 a 3 h al dia 3, de 3 a 5 horas al dia 4, de 5 a 7 h al dia 5, mas de 7 horas al dia
stiemov	Case evaluation - Daily Life Activity		calc	YPAS indice Movimiento	[tiemov]*3



esdep	Case evaluation - Daily Life Activity		radio	¿Piense en cuanto tiempo paso de pie, como promedio, durante el ultimo mes. Aproximadamente cuantas horas al dia esta de pie?	0, ninguna 1, <1h dia 2, de 1 a 3 h al dia 3, de 3 a 5 horas al dia 4, de 5 a 7 h al dia 5, mas de 7 horas al dia
sesdep	Case evaluation - Daily Life Activity		calc	YPAS indice Bipedestacion	[esdep]*2
tisen	Case evaluation - Daily Life Activity		radio	¿Aproximadamente, en un día típico del último mes, cuantas horas paso sentado/a?	0, ninguna 1, <1h dia 2, de 1 a 3 h al dia 3, de 3 a 5 horas al dia 4, de 5 a 7 h al dia 5, mas de 7 horas al dia
stisen	Case evaluation - Daily Life Activity		calc	YPAS indice Sedestacion	[tisen]*1
sindre	Case evaluation - Daily Life Activity		calc	INIDICE RESUMEN DE ACTIVIDAD FISICA	sum([spas],[stiemov],[sesdep],[stisen])
adherenceprofile	Case evaluation – Adherence profile	Social/Family support	radio	¿Dispone de soporte familiar/social?	0, Apropiado 1, Disposición a ayudar 2, no apropiado
namesupport	Case evaluation – Adherence profile		text	Nombre de la persona de soporte	
contactsupport	Case evaluation – Adherence profile		text	Información de contacto de la persona de soporte	
psycosessions	Case evaluation – Psychologist session		radio	¿Participará en la sesión inicial de evaluación psicológica?	0, Si 1, No



3.3 Personalized work plan definition

Variable Name	Form Name	Section Header	Field Type	Field Label	Choices / calculations
promoPA	Personalized work plan definition - target daily steps	Promotion of physical activity	text	Objetivo diario de pasos	
PAactivities	Personalized work plan definition – promotion of PA		radio	Lugar donde realizar la actividad física	0, En casa 1, En la comunidad 2, Consultas externas
dietaryinterv	Personalized work plan definition – Dietary intervention	Specific dietary intervention	text	Intervención nutricional	
motivMSGmode	Personalized work plan definition – Self-management and education	Self-management and education	radio	Modo de mensaje motivacional	0, Personalizada 1, Predefinida
motivationalMSG	Personalized work plan definition - Self-management and education		text	Mensaje motivacional	
educationaltipsmode	Personalized work plan definition – Educational tips		radio	Modo de información educacional	0, Personalizada 1, Predefinida
educationaltipsMSG	Personalized work plan definition – Educational tips		text	Información educacional	

3.4 Work plan execution

Variable Name	Form Name	Section Header	Field Type	Field Label	Choices / calculations
healthstatus	Work plan execution – Health status	Health status	Text	Resultado de la sesión presencial para el seguimiento del	



				estado de salud del paciente.	
mindfulnesspatient	Work plan execution – Psychological intervention	Mindfulness	radio	¿Atiende el paciente a la sesión?	0, Si 1, No
mindfulnesscaregiver	Work plan execution – Psychological intervention		radio	¿Atiende el soporte social/familiar a la sesión?	0, Si 1, No
mindfulnessresult	Work plan execution – Psychological intervention		text	Resultado de la sesión presencial de mindfulness.	
supervisedRehab	Work plan execution - supervised training	High intensity supervised rehabilitation sessions	text	Resultado de la sesión presencial de rehabilitación.	
interviewWeekly	Work plan execution – promotion of PA	Promotion of PA	text	Resultado de la sesión presencial para el seguimiento de la actividad física.	
stepsreported	Work plan execution – PA reported		text	Actividad física reportado por el usuario (podómetro).	
nutrireported	Work plan execution – Nutritional status reported	Nutritional status	text	Resultado de la sesión presencial para el seguimiento del estado nutricional.	
nutrireported	Work plan execution – Nutritional status reported		text	Estado nutricional reportado por el usuario.	
ictexplained	Work plan execution – Explain ICT	Educational session regarding the use of ICT	text	Resultado de la sesión presencial para la explicación del uso de las TIC.	



pericare	Work plan execution – Peri-care	Peri-surgical care	text	Nota clínica sobre los cuidados peri- quirúrgicos	
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3.5 Discharge

Variable Name	Form Name	Section Header	Field Type	Field Label	Choices / calculations
dischargereason	Discharge - reason	Discharge reason	Text	¿Cuál es el Motivo del alta?	
dischargereport	Discharge - report	Discharge report	Text	Informe del alta	



6.2.2 Lleida (Spain)



CONNECARE

Case Study 1 - Definition

Lleida

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
CO	Confidential, only for members of the consortium (including the Commission Services)

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Deliverable	Number	Title
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Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input type="checkbox"/>			

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Abstract	
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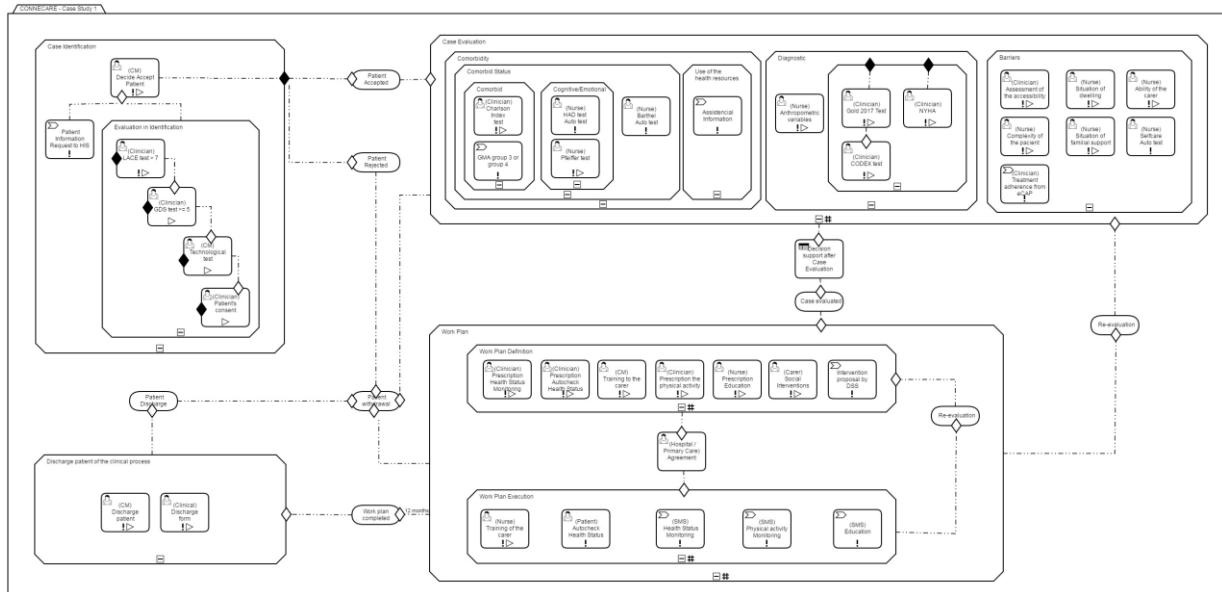
Executive Summary

This document presents the process diagrams with the questionnaires and forms used in each step of the process. For each one we have added the URL to find the original definition in English or/and Spanish. In case of forms defined by the clinician we have added the questions inside the document.

In addition to this information, we have prepared a section call “data collection” which is based on the previous works of Felix and Isaac for the CS3. In this section, you can find more technical information to help to build the SACM ‘s forms.



1. Case Study Diagram

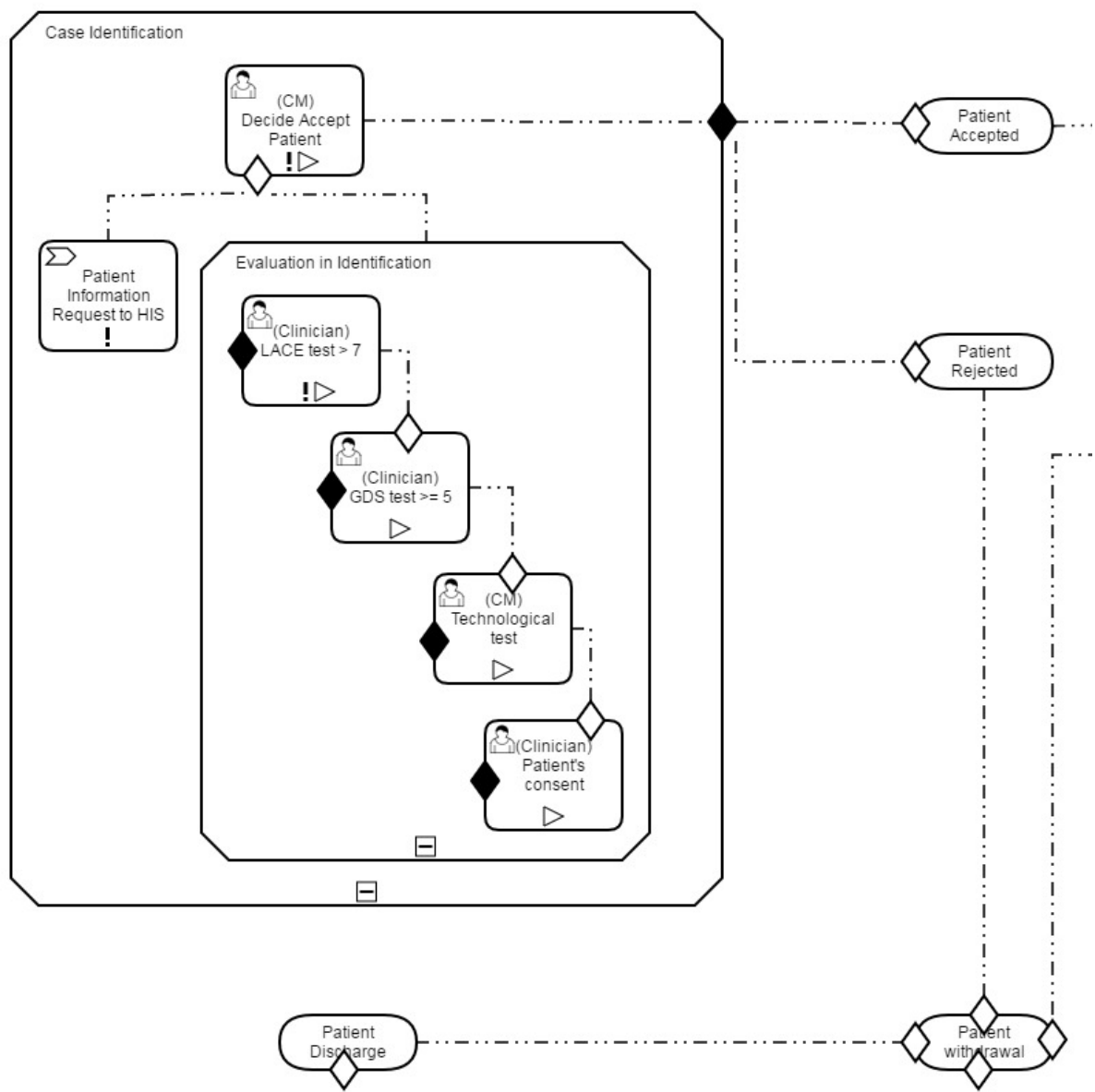




2. Forms Description by steps

This sections presents all the forms used during the process of the CS1 in IRBLLEIDA. Some of this forms will be performed by the SACM and other by the SMS. Each form indicates the CONNECARE Subsystem responsible of each one.

2.1 Case Identification





2.1.1 Supervised Questionnaires

2.1.1.1 LACE Test

Name
LACE Index Scoring Tool for Risk Assessment of Hospital Readmission
URL (ENG)
http://cdn.slidesharecdn.com/ss_thumbnails/laceindexscoringtool-150414105404-conversion-gate01-thumbnail-4.jpg?cb=1429008903
URL (ES)
Responsible
Clinician
Comments

2.1.1.2 GDS Test

Name
Geriatric Depression Scale
URL (ENG)
http://geropsychiatriceducation.vch.ca/docs/edu-downloads/depression/short_long_geriatric_depression_scale_GDS.pdf
URL (ES)
http://www.hvn.es/enfermeria/ficheros/test_de_yesavage.pdf
Responsible
Clinician
Comments

2.1.1.3 Technological Test

Name
Technological Test
URL (ENG)
URL (ES)
Responsible
Case Manager
Comments
Specific test for the site.
Vosté o el seu cuidador tenen connexió a internet? NO / SI Vosté fa anar: Telèfon mòvil no tan sols per trucar.



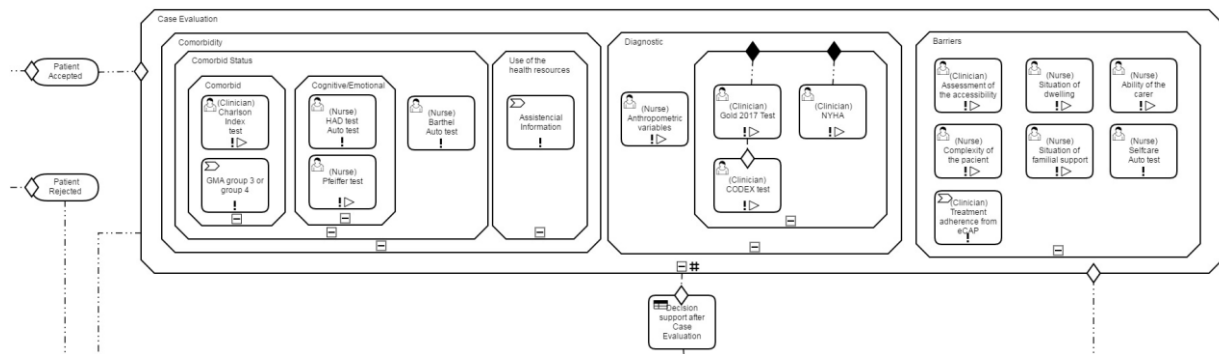
Tablet.
 Ordinador personal.
 Cap
 El seu cuidador principal fa anar:
 Telèfon mòvil no tan sols per trucar.
 Tablet.
 Ordinador personal.
 Cap.

* Qualdevol resposta excepte "CAP" es dona per apte.

2.1.1.4 Patient's Consent

Name
Patient Consent
URL (ENG)
URL (ES)
Responsible
Clinician
Comments
Check if the patients agreed to be treated within the process. The form will be provided for the hospital and customized following the corresponding ethics committee.

2.2 Case Evaluation



2.2.1 Supervised Forms

2.2.1.1 Charlson Index

Name



Charlson Comorbidity Index
URL (ENG)
URL (ES)
http://www.infodoctor.org/www/charlson.htm
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments

2.2.1.2 Pfeiffer Test

Name
Short Portable Mental Status Questionnaire (SPMSQ)
URL (ENG)
https://www.healthcare.uiowa.edu/igec/tools/cognitive/SPMSQ.pdf
URL (ES)
http://www.sefap.org/congresos/congreso2009/talleres/presentaciones/Taller4.5.pdf
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments

2.2.1.3 NYHA (in case of cardiac insufficiency)

Name
New York Heart Association (NYHA) classes
URL (ENG)
http://www.heartfailurematters.org/en_GB/Understanding-heart-failure/How-heart-failure-is-graded
URL (ES)
http://www.meiga.info/escalas/nyha.pdf
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments

2.2.1.4 GOLD 2017(in case of COPD)

--



Name
Global Initiative for Obstructive Lung Disease Guidelines 2017
URL (ENG)
http://pulmccm.org/main/2016/copd-review/new-2017-gold-guidelines-copd-released/
URL (ES)
https://gruposrespiratoriointegramedica.wordpress.com/2016/11/20/guias-gold-2017-primera-parte/
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments

2.2.1.5 CODEX (in case of COPD)

Name
Comorbidity Obstruction Dyspnea Exacerbation Index
URL (ENG)
URL (ES)
http://www.revclinesp.es/controladores/congresos-herramientas.php?idCongreso=15&idSesion=1336&idComunicacion=14162
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
<ul style="list-style-type: none"> • Comorbidity: Charlson Index corrected by age • Obstruction: FEV1 (Forced Expiratory Volume) • Dyspnea: mMRC (Medical Research Council Scale) • Exacerbation which implies questions to the emergency units or emergency admissions.



Table 1—Variables and Thresholds to Estimate the CODEX Index

CODEX	Domain	Variables	Scoring			
			0	1	2	3
C	Comorbidity	Charlson index ^a	0-4	5-7	≥8	...
O	Obstruction	FEV ₁ %	≥65	50-64	36-49	≤35
D	Dyspnea	mMRC scale	0-1	2	3	4
EX	Exacerbation	Exacerbation ^b	0	1-2	≥3	...

CODEX = comorbidity, obstruction, dyspnea, and previous severe exacerbations; mMRC = modified Medical Research Council.

^aCharlson index: one point is added to the total score for each decade of life over the age of 50 y.

^bSevere exacerbations of COPD during the previous year (hospitalization or ED consultations).

2.2.1.6 Smoking Treatment situation

Name
Smoking Treatment Situation
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
Specific test for the site.
<p>¿Está usted dispuesto a dejar de fumar? Si / No</p> <p>¿Ha probado otras veces algún tratamiento con medicamentos para dejar de fumar? Si / No</p> <p>¿Cuál ha sido el motivo por el cual no finalizó el tratamiento?</p> <p>Falta de efectividad: Si / No.</p> <p>Costes del tratamiento: Si / No.</p> <p>Imposibilidad para el desplazamiento o no disponibilidad de consulta antitabaco cercana: Si / No.</p> <p>Efectos secundarios intolerables: Si / No.</p> <p>Otros motivos: Si / No.</p>

2.2.1.7 Accessibility to the treatment



Name
Accessibility to the treatment
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
Specific test for the site.
<ul style="list-style-type: none"> - ¿Tiene luz eléctrica en su casa? Si / No - ¿Ha utilizado alguna vez oxígeno en su domicilio? Si / No - ¿Ha notado algún cambio en la factura de la electricidad desde utiliza el oxígeno? Si / No - En caso afirmativo a la pregunta anterior: ¿El incremento de la factura de la luz ha supuesto una limitación para utilizar el oxígeno en su domicilio?

2.2.1.8 Anthropometric Variables

Name
Anthropometric Variables
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
<p>This information is gathered by the nurse without smart devices.</p> <p>The data stored will be:</p> <ul style="list-style-type: none"> - Weight - Height or distance between knee – ankle (see section 4.1)

2.2.1.9 Situation of dwelling

Name
Dwelling
URL (ENG)
URL (ES)



Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
The dwelling is assessed as problem that might impact in the patient health outcome if any of the current situations is identified: <ul style="list-style-type: none"> 1- Difficult access (absence of elevator in the patient's dwelling building in patients with bad functional status) 2- Unhealthy or untidy previously reported by social services.

2.2.1.10 Ability of the career

Name
Ability of the career
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
The self-care and family support is assessed as a problem that might impact in the patient health outcome if any of the current situations is identified: <ul style="list-style-type: none"> 1/ Unable for self-care reported by social services or unfavourable score in self-care test. 2/ Caved or unable carer (reported by social services or by health care professionals (physician or nurse)

2.2.1.11 Complexity of the patient

Name
Complexity of the patient
URL (ENG)
URL (ES)

Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
<p>One or more positive items determine a treatment as complex:</p> <ul style="list-style-type: none"> 1 - More than 4 tablets / day. 2 - Difficult to prepare. 3 - Difficult to run or patient not able to run (inhalation technique mistakes are included).

2.2.1.12 Situation of familiar support

Name
Familiar support
URL (ENG)
URL (ES)
Responsible
CONNECARE Subsystem
SACM
Comments
<p>Familiar support is assessed as a problem that might impact in the patient health outcome if any of this situations is identified:</p> <ul style="list-style-type: none"> 1/ Lives alone or spends alone most of the day 2/ The carer has a chronic disease as well.

2.2.2 Self-check Forms

2.2.2.1 HAD Test

Name
Hospital Anxiety and Depression Scale
URL (ENG)
http://www.scalesandmeasures.net/files/files/HADS.pdf
URL (ES)
http://www.guiasalud.es/egpc/ansiedad/completa/documentos/anexos/Anexo2_Intrumentos%20de%20medida.pdf



Responsible
Nurse
CONNECARE Subsystem
SMS
Comments
To be fulfilled by the patient

2.2.2.2 Barthel autotest

Name
Barthel Index Scoring Form
URL (ENG)
http://www.massgeneral.org/stopstroke/assets/PDFs/barthel_index.pdf
URL (ES)
http://www.hvn.es/enfermeria/ficheros/barthel.pdf
Responsible
Nurse
CONNECARE Subsystem
SMS
Comments
To be fulfilled by the patient.

2.2.2.3 Self-care autotest

Name
Self-care autotest
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SMS
Comments
To be fulfilled by the patient Specific test for the site.
COPD
Please answer truthfully.
<ul style="list-style-type: none"> - Mark 1 if you strongly agree with the statement (so you always act in agreement to it) - Mark 5 if you strongly disagree with the statement (so you never act in agreement to it) - Mark 2 to 4 for intermediate responses. Although being unsure about some of the statements, please mark the option that better suits you.



	Strongly agree / always				Strongly disagree / never
1. I check my weight daily	1	2	3	4	5
2. If I experience shortness of breath (dyspnoea) I stop and rest	1	2	3	4	5
3. If my difficulties to breath (dyspnoea) increase, I contact my doctor or nurse	1	2	3	4	5
4. If my legs swell more than usual, I contact my doctor or nurse	1	2	3	4	5
5. If I gain 2 or more kg in a week, I contact my doctor or nurse	1	2	3	4	5
6. I limit the amount of liquids I drink (less than 1.5 or 2 l/day)	1	2	3	4	5
7. I rest for a while during the day	1	2	3	4	5
8. If I feel more tired than usual, I contact my doctor or nurse	1	2	3	4	5
9. I have a low salt diet	1	2	3	4	5
10. I take my medication as prescribed	1	2	3	4	5
11. I get the flu vaccine every year	1	2	3	4	5
12. I do regular physical activity	1	2	3	4	5

Score > 16: alarm

Cardiac insufficiency

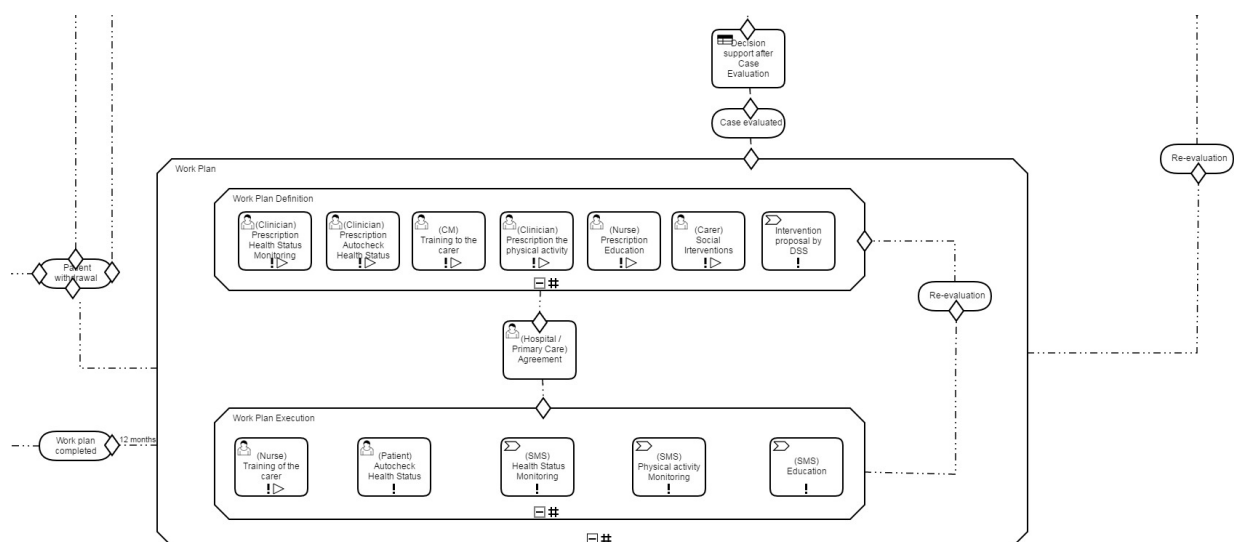
	Strongly agree / always				Strongly disagree / never
If I experience shortness of breath (dyspnoea) I stop and rest	1	2	3	4	5

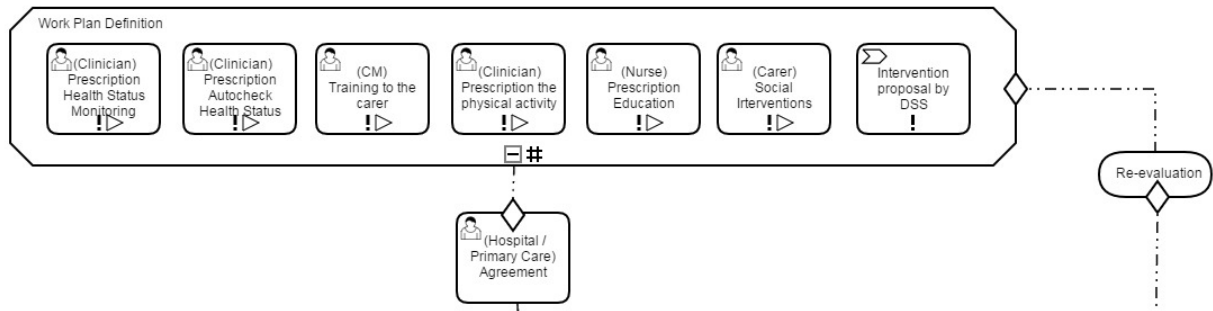


If my difficulties to breath (dyspnoea) increase, I contact my doctor or nurse	1	2	3	4	5
If my coughing and mucus production (sputum) increase and mucus becomes nasty, I contact my doctor or nurse	1	2	3	4	5
I rest for a while during the day	1	2	3	4	5
If I feel more tired than usual, I contact my doctor or nurse	1	2	3	4	5
I take my medication as prescribed	1	2	3	4	5
I get the flu vaccine every year	1	2	3	4	5
I do regular physical activity	1	2	3	4	5

Score > 24: alarm

2.3 Work-plan Definition





2.3.1 Interventions

2.3.1.1 Prescription Vital Signs Monitoring

Name
Prescription Vital Signs Monitoring
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS which is the responsible to manage prescriptions and the patient's results. The signs that can be monitored are: <ul style="list-style-type: none"> - Weight. - Oxygen Saturation. - Arterial Pressure. - Hearth rate. - Temperature. In each of the variables the prescription needs to indicate: <ul style="list-style-type: none"> - Start date. - End date. - Vital sign to be monitored (one and only one). - Frequency of the measurement (in hours / days / weeks / months). TO BE DEFINED - Thresholds (min / max) to rise an alarm.

2.3.1.2 Prescription Autocheck Health Status

Name
Prescription Autocheck Health Status
URL (ENG)



URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
<p>The data will be sent to the SMS which is the responsible to manage prescriptions and the patient's results.</p> <p>There are different autocheck forms depending on the patient's situation:</p> <ul style="list-style-type: none"> - EPOC patients - Cardiac Insufficiency <p>In both cases the data to prescribe the test is:</p> <ul style="list-style-type: none"> - Start date. - End date. - Frequency of the test (in hours / days / weeks / months).

2.3.1.3 Physical Activity Prescription

Name
Physical Activity Prescription
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
<p>The data will be sent to the SMS which is the responsible to manage prescriptions and the patient's results.</p> <p>The data need to prescribe physical activity is:</p> <ul style="list-style-type: none"> - Start date. - End date. - Number of steps daily. - Intensity of the activity. <ul style="list-style-type: none"> o Minutes of low level activity daily. o Minutes of medium level activity daily. o Minutes of high level activity daily. - Max. minutes without activity allowed daily.

2.3.1.1 Patient Education and Training to the Caregiver

Name
Patient Education and Training to the Caregiver



URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
Determine if the education is needed for the patient and for the caregiver. The education material and outline is standard so cannot be customizable for each patient.

2.3.1.2 Social Interventions

Name
Social Interventions proposal
URL (ENG)
URL (ES)
Responsible
Social career
CONNECARE Subsystem
SACM
Comments
Form with the different intervention from the social point of view: <ul style="list-style-type: none"> • Facilitar cuidador por horas. • Facilitar tele-asistencia. • Facilitar cuidador por horas. • Facilitar tele-asistencia. • Visitas domiciliarias de enfermeria. • Facilitar cuidador por horas. • Visitas domiciliarias de enfermeria.

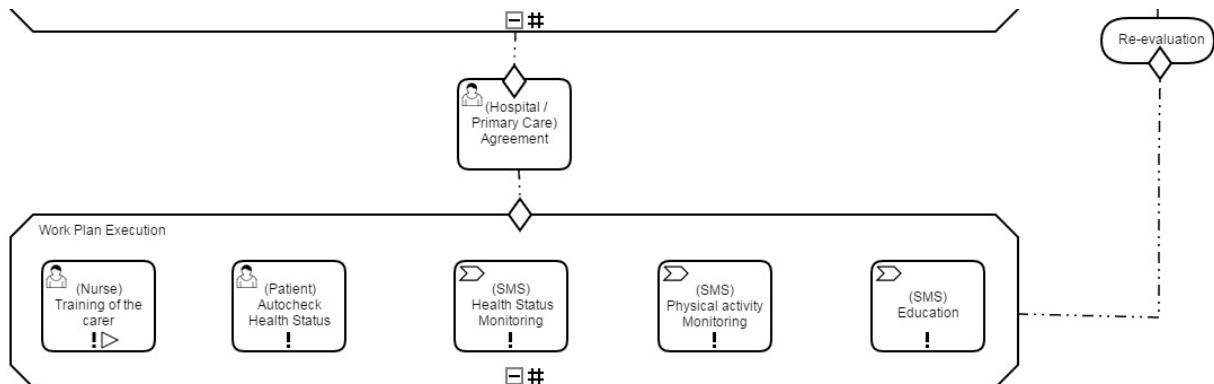
2.3.1.3 Work Plan Definition Agreement

Name
Work Plan Definition Agreement
URL (ENG)
URL (ES)
Responsible
All the professional staff
CONNECARE Subsystem



SACM
Comments
<p>Once all the interventions are defined they should be accepted by all the professionals involved into the process.</p> <p>The form consist in the next validation fields:</p> <ul style="list-style-type: none"> - Validation of the prescription of the vital sings monitoring. - Validation of the auto-check prescription - Validation of the physical activity prescription - Validation of the education material proposed - Validation of the proposed training plan for the caregiver - Validation of the social interventions <p>In each field should exist the possibility to see the intervention proposal.</p> <p>The possible values are:</p> <ul style="list-style-type: none"> - Accepted by the hospital and primary care - Rejected by the hospital and primary care - Rejected by the hospital - Rejected by primary care

2.4 Work-plan Execution



2.4.1 Intervention execution

2.4.1.1 Vital Signs Monitoring

The data will be obtained directly from the smart devices. The patient will be alert to use the proper device corresponding with the prescription but no form will be showed to be fulfilled.

2.4.1.2 Answer Autocheck Health Status

Name
Answer Autocheck Health Status
URL (ENG)



URL (ES)

Responsible

Clinician

CONNECARE Subsystem

SMS

Comments

The data will be sent to the SMS which is the responsible to manage prescriptions and the patient's results.

There are different autocheck forms depending on the patient's situation:

EPOC patients

	Mas o menos igual que siempre.	Peor que un tiempo atrás
Me ahogo		
	Mas o menos igual que siempre.	Peor que un tiempo atrás
He dormido		
	Mas o menos igual que siempre.	Peor que un tiempo atrás
Me Siento		
En EPOC (además)		
	Mas o menos igual que siempre.	Peor que un tiempo atrás
Arranco mucosidad		
	Tengo mas o menos igual que siempre.	Peor que un tiempo atrás
La tos o los pitos		

Score: EPOC: (5 items) \geq 2: (alarm)

Cardiac Insufficiency

	Mas o menos igual que siempre.	Mas que en días anteriores.
Me ahogo		
	Mas o menos igual que siempre.	Peor que en días anteriores.
He dormido		
	Mas o menos igual que siempre.	Mas cargado o hinchado que en días anteriores



Me Siento		
En Insuficiencia cardiaca (además)		
	Mas o menos igual que siempre.	Menos que en días anteriores
Orino		
	Mas o menos igual que siempre.	Más hinchados que en días anteriores
Tengo los pies		
Score: IC : (5 items) ≥ 2: (alarm)		

2.4.1.3 Physical Activity Monitoring

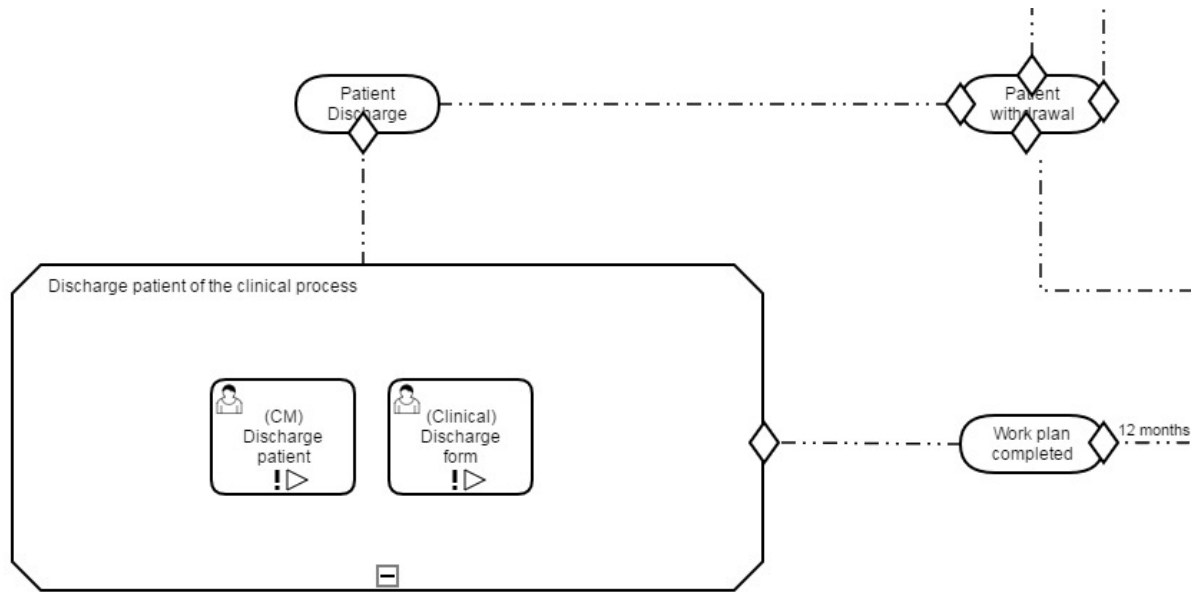
The data will be obtained directly from the fitness trackers. The patient will be alert with the prescription and proper alerts but no form will be showed to be fulfilled.

2.4.1.4 Patient Education and Training to the Caregiver

Name
Education actions for patients and caregivers
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
The nurse does educational events with the patients and the caregivers during the hospitalization and after it. This form recollects the status of these events.



2.5 Discharge



2.5.1 Supervised Forms

2.5.1.1 Discharge Patient Form

Name
Work Plan Definition Agreement
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
The clinical staff notifies the discharge to the patient.

2.5.1.2 Discharge Form

Name
Work Plan Definition Agreement



URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
The clinical staff notifies the discharge to the system.



3. Data Collection

3.1 Case Identification

3.1.1 LACE Test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
lace1	Case identification – lace	LACE Index	radio	Length of Stay (including day of admission and discharge)	1, 1 day 2, 2 days 3, 3 days 4, 4-6 days 5, 7-13 days 7, 14 or more days
lace2	Case identification – lace	LACE Index	radio	Was the patient admitted to hospital via the emergency department?	0, No 1 3, Yes
lace3	Case identification – lace	LACE Index	radio	Conditions - Previous myocardial infarction	0, No 1, Yes
lace4	Case identification – lace	LACE Index	radio	Conditions - Cerebrovascular disease	0, No 1, Yes
lace5	Case identification – lace	LACE Index	radio	Conditions - Peripheral vascular disease	0, No 1, Yes
lace6	Case identification – lace	LACE Index	radio	Conditions - Diabetes without complications	0, No 1, Yes



Lace7	Case identification – lace	LACE Index	radio	Conditions - Congestive heart failure	0, No 2, Yes
Lace8	Case identification – lace	LACE Index	radio	Conditions - Diabetes with end organ damage	0, No 2, Yes
Lace9	Case identification – lace	LACE Index	radio	Conditions – Chronic pulmonary disease	0, No 2, Yes
Lace10	Case identification – lace	LACE Index	radio	Conditions – Mild liver or renal disease	0, No 2, Yes
lace11	Case identification – lace	LACE Index	radio	Conditions – Any tumor (including lymphoma or leukemia)	0, No 2, Yes
Lace12	Case identification – lace	LACE Index	radio	Conditions - Dementia	0, No 3, Yes
Lace13	Case identification – lace	LACE Index	radio	Conditions – Connective tissue disease	0, No 3, Yes
Lace14	Case identification – lace	LACE Index	radio	Conditions – AIDS	0, No 4, Yes
Lace15	Case identification – lace	LACE Index	radio	Conditions – Moderate or severe liver or renal disease	0, No 4, Yes
Lace16	Case identification – lace	LACE Index	radio	Conditions – Metastatic solid tumor	0, No 6, Yes
Lace17	Case identification – lace	LACE Index	calc	Comorbidities	sum([lace3], [lace4], [lace5], [lace6], [lace7], [lace8], [lace9], [lace10], [lace11], [lace12], [lace13], [lace14], [lace15], [lace16])



Lace18	Case identification – lace	LACE Index	radio	Emergency department visits (six months prior to admission)	0, 0 visits 1, 1 visits 2, 2 visits 3, 3 visits 4, 4 or more visits
Lace19	Case identification – lace	LACE Index	calc	LACE Score Risk of Readmission	sum([lace1], [lace2], [lace17], [lace18])

3.1.2 GDS Test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
gds1	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Are you basically satisfied with your life?	1, No 0, Yes
gds2	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Have you dropped many of your activities and interests?	0, No 1, Yes
Gds3	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Do you feel that your life is empty?	0, No 1, Yes
Gds4	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Do you often get bored?	0, No 1, Yes
Gds5	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Are you in good spirits most of the time?	1, No 0, Yes
Gds6	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Are you afraid that something	0, No 1, Yes



		Scale (Short Form)		bad is going to happen to you?	
Gds7	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Do you feel happy most of the time?	1, No 0, Yes
Gds8	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Do you often feel helpless?	0, No 1, Yes
Gds9	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Do you prefer to stay at home, rather than going out and doing new things?	0, No 1, Yes
Gds10	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Do you feel you have more problems with memory than most?	0, No 1, Yes
Gds11	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Do you think it is wonderful to be alive?	1, No 0, Yes
Gds12	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Do you feel pretty worthless the way you are now?	0, No 1, Yes
Gds13	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Do you feel full of energy?	1, No 0, Yes
Gds14	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Do you feel that your situation is hopeless?	0, No 1, Yes



		Scale (Short Form)			
Gds15	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	Do you think that most people are better off than you are?	0, No 1, Yes
Gds16	Case identification – gds	Geriatric Depression Scale (Short Form)	radio	GDS Score	sum([gds3], [gds4], [gds5], [gds6], [gds7], [gds8], [gds9], [gds10], [gds11], [gds12], [gds13], [gds14], [gds15], [gds16])

3.1.3 Technological Test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
tech1	Case identification – Technological Test	Technological Test	radio	Vosté o el seu cuidador tenen connexió a internet?	0, No 1, Yes
Tech2	Case identification – Technological Test	Technological Test	checkbox	Vosté fa anar:	1, Telèfon mòvil no tan sols per trucar. 2, Tablet. 3, Ordinador personal. 0, Cap
Tech3	Case identification – Technological Test	Technological Test	radio	El seu cuidador principal fa anar:	1, Telèfon mòvil no tan sols per trucar. 2, Tablet. 3, Ordinador personal. 0, Cap
Tech4	Case identification – Technological Test	Technological Test	calc	Technological test result	Sum ([tech1],[tech2],[tech3]) == 0 , No Apte



					Sum ([tech1],[tech2],[tech3]) >0 , Apte
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3.1.4 Patient's Consent

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
pConsent1	Case identification – Patient's Consent	Patient's Consent	radio	Accepta participar al procés clínic descrit al present document?	0, No 1, Yes

3.2 Case Evaluation

3.2.1 Charlson Index

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ch1	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Myocardial infarct	0, No 1, Yes
ch2	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Congestive heart failure	0, No 1, Yes
ch3	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Peripheral vascular disease	0, No 1, Yes
ch4	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Cerebrovascular disease (except hemiplegia)	0, No 1, Yes
ch5	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Dementia	0, No 1, Yes
ch6	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Chronic pulmonary disease	0, No 1, Yes
ch7	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Connective tissue disease	0, No 1, Yes



ch8	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Ulcer disease	0, No 1, Yes
ch9	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Mild liver disease	0, No 1, Yes
ch10	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Diabetes (without complications)	0, No 1, Yes
ch11	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Diabetes with end organ damage	0, No 1, Yes
ch12	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Hemiplegia	0, No 1, Yes
ch13	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Moderate or severe renal disease	0, No 1, Yes
ch14	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Solid tumor (non metastatic)	0, No 1, Yes
ch15	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Leukemia	0, No 1, Yes
ch16	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Lymphoma, Multiple myeloma	0, No 1, Yes
ch17	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Moderate or severe liver disease	0, No 1, Yes
ch18	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Metastatic solid tumor	0, No 1, Yes
ch19	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	AIDS	0, No 1, Yes
ch20	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 50-59	0, No 1, Yes
ch21	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 60-69	0, No 1, Yes
ch22	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 70-79	0, No 1, Yes
ch23	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 80-89	0, No 1, Yes



ch24	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 90-99	0, No 1, Yes
ch25	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	calc	Charlson Comorbidity Index	sum([ch1]*1, [ch2]*1, [ch3]*1, [ch4]*1, [ch5]*1, [ch6]*1, [ch7]*1, [ch8]*1, [ch9]*1, [ch10]*1, [ch11]*2, [ch12]*2, [ch13]*2, [ch14]*2, [ch15]*2, [ch16]*2, [ch17]*3, [ch18]*6, [ch19]*6, [ch20]*1, [ch21]*2, [ch22]*3, [ch23]*4, [ch24]*5)

3.2.2 Pfeiffer Test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
pfeiffer1	Case evaluation – Comorbidity - Pfeiffer	Pfeiffer Index	dropdown	Number of errors	0 – 10
pfeiffer2	Case evaluation – Comorbidity - Pfeiffer	Pfeiffer Index	calc	Pfeiffer Index	pfeiffer1 equals (0, 1, 2) -> “Intact Intellectual Functioning” pfeiffer1 equals (3, 4) -> “Mild Intellectual Impairment” pfeiffer1 equals (5, 6, 7) -> “Moderate Intellectual Impairment” pfeiffer1 equals (8, 9, 10) -> “Severe Intellectual Impairment”

3.2.3 NYHA (in case of cardiac insufficiency)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
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nyha1	Case evaluation - Diagnosis - nyha	HYHA Index	radio	NYHA functional classes	<p>Class I , Class I (no symptoms) You have no symptoms and can perform daily activities without feeling tired or short of breath.</p> <p>Class II, Class II (mild symptoms) You are comfortable when resting, but moderate activity makes you tired or short of breath.</p> <p>Class III, Class III (moderate symptoms) You are comfortable when resting, but even limited physical activity makes you tired or short of breath.</p> <p>Class IV, Class IV (severe symptoms) You are unable to do any physical activity without discomfort and experience some symptoms at rest.</p>
nyha2	Case evaluation - Diagnosis - nyha		radio	NYHA Stages	<p>Stage A, Stage A You don't have heart failure. But you are at high risk due to having another medical condition that can lead to heart failure, such as high blood pressure, diabetes, obesity or coronary artery disease.</p> <p>Stage B, Stage B Your heart has been damaged by your other medical condition(s) or other factors, but you don't have any symptoms yet.</p> <p>Stage C, Stage C Your heart is damaged and you are experiencing heart failure symptoms.</p> <p>Stage D, Stage D You have severe heart failure that requires specialised care, despite receiving treatment.</p>



3.2.4 GOLD 2017(in case of COPD)

3.2.5 CODEX (in case of COPD)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
codex1	Case evaluation - Diagnosis - codex	CODEX Index	Calc	Comorbidity: Charlson Index corrected by age	(Value from ch25) 0, ch5 <5 1, 4< ch5 <8 2, ch5 >7
codex2	Case evaluation - Diagnosis - codex	CODEX Index	num	Obstruction: FEV1 (Forced Expiratory Volume)	0, codex2 < 64 1, 49 < codex2 < 65 2, 35 < codex2 < 50 3, codex2 < 36
codex3	Case evaluation - Diagnosis - codex	CODEX Index	num	Dyspnea: mMRC (Medical Research Council Scale)	0, codex3 < 2 1, codex3 == 2 2, codex3 == 3 3, codex3 == 4
codex4	Case evaluation - Diagnosis - codex	CODEX Index	Num	Exacerbation which implies questions to the emergency units or emergency admissions.	0, codex4 == 0 1, 0 < codex4 < 3 2, codex4 > 2
codex5	Case evaluation - Diagnosis - codex	CODEX Index	calc	CODEX Index	Sum([codex1], [codex2], [codex3], [codex4])

3.2.6 Smoking Treatment Situation

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
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smoke1	Case evaluation - Diagnosis - smoke	Smoking Treatment Situation	radio	¿Está usted dispuesto a dejar de fumar?	0, No 1, Yes
smoke2	Case evaluation - Diagnosis - smoke		radio	¿Ha probado otras veces algún tratamiento con medicamentos para dejar de fumar?	0, No 1, Yes In case of 1 (Yes) enable the smoke3 question
smoke3	Case evaluation - Diagnosis - smoke		radio	¿Cuál ha sido el motivo por el cual no finalizó el tratamiento?	0 Falta de efectividad. 1 Costes del tratamiento. 2 Imposibilidad para el desplazamiento o no disponibilidad de consulta antitabaco cercana. 3 Efectos secundarios intolerables. 4 Otros motivos.
smoke4	Case evaluation - Diagnosis - smoke		radio	Cerebrovascular disease (except hemiplegia)	0, No 1, Yes

3.2.1 Accessibility to the treatment

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
treatmentAccess1	Case evaluation – Treatment Accessibility	Treatment Accessibility	radio	¿Tiene luz eléctrica en su casa?	0, No 1, Yes
treatmentAccess2	Case evaluation – Treatment Accessibility	Treatment Accessibility	radio	¿Ha utilizado alguna vez oxígeno en su domicilio?	0, No 1, Yes
treatmentAccess3	Case evaluation – Treatment Accessibility	Treatment Accessibility	radio	¿Ha notado algún cambio en la factura de la electricidad desde utiliza el oxígeno?	0, No 1, Yes



treatmentAccess4	Case evaluation – Treatment Accessibility	Treatment Accessibility	radio	En caso afirmativo a la pregunta anterior: ¿El incremento de la factura de la luz ha supuesto una limitación para utilizar el oxígeno en su domicilio?	Only if treatmentAccess3 == 1) 0, No 1, Yes
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3.2.2 Anthropometric Variables

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
anth1	Case evaluation - Diagnosis – anthropometric variables	Anthropometric Variables	text	Weight	
anth2	Case evaluation - Diagnosis - anthropometric variables		text	Height or distance between knee – ankle	

3.2.3 Situation of dwelling

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
dwelling1	Case evaluation – Social - Dwelling	Dwelling	Radio	Complex Access to the patient’s house	0, No 1, Yes
dwelling2	Case evaluation – Social - Dwelling	Dwelling	radio	Unhealthy or untidy habits	0, No 1, Yes

3.2.4 Self-care and ability of the career

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
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career1	Case evaluation – Social – Career ability	Career ability	Radio	Unable for self-care reported by social services or unfavourable score in self-care test.	0, No 1, Yes
career2	Case evaluation – Social – Career ability	Career ability	radio	Caved or unable carer (reported by social services or by health care professionals)	0, No 1, Yes

3.2.5 Complexity of the patient

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
complexity1	Case evaluation – Social – Complexity of the patient	Complexity of the patient	Radio	Has the treatment more than 4 tablets/day?	0, No 1, Yes
complexity2	Case evaluation – Social – Complexity of the patient	Complexity of the patient	radio	Is the treatment hard to prepare?	0, No 1, Yes
Complexity3	Case evaluation – Social – Complexity of the patient	Complexity of the patient	radio	Is the treatment easy to run? Is able the patient to run it? (Inhalation technique mistakes are included).	1, No 0, Yes
Complexity4	Case evaluation – Social – Complexity of the patient	Complexity of the patient	Calc	Complexity	0, Sum([complexity2],[complexity2],[complexity2]) == 0 1, Sum([complexity2],[complexity2],[complexity2]) >0



3.2.6 Situation of family support

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
family1	Case evaluation – Family Support	Family Support	Radio	Lives alone or spends alone most of the day?	0, No 1, Yes
family1	Case evaluation – Family Support	Family Support	Radio	Has the carer a chronic disease as well?	0, No 1, Yes

3.2.1 Hospital Anxiety and Depression Scale

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Had-A1	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I feel tense or 'wound up'	3, Most of the time 2, A lot of the time 1, From time to time, occasionally 0, Not at all
Had-D1	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I still enjoy the things I used to enjoy:	0, Definitely as much 1, Not quite so much 2, Only a little 3, Hardly at all
Had-A2	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I get a sort of frightened feeling as if something awful is about to happen:	3, Very definitely and quite badly 2, Yes, but not too badly 1, A little, but it doesn't worry me 0, Not at all



Had-D2	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I can laugh and see the funny side of things:	0, As much as I always could 1, Not quite so much now 2, Definitely not so much now 3, Not at all
Had-A3	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	Worrying thoughts go through my mind:	3, A great deal of the time 2, A lot of the time 1, From time to time, but not too often 0, Only occasionally
Had-D3	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I feel cheerful:	3, Not at all 2, Not often 1, Sometimes 0, Most of the time
Had-A4	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I can sit at ease and feel relaxed:	0, Definitely 1, Usually 2, Not Often 3, Not at all
Had-D4	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I feel as if I am slowed down:	3, Nearly all the time 2, Very often 1, Sometimes 0, Not at all
Had-A5	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I get a sort of frightened feeling like 'butterflies' in the stomach:	0, Not at all 1, Occasionally 2, Quite Often 3, Very Often



Had-D5	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I have lost interest in my appearance:	3, Definitely 2, I don't take as much care as I should 1, I may not take quite as much care 0, I take just as much care as ever
Had-A6	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I feel restless as I have to be on the move:	3, Very much indeed 2, Quite a lot 1, Not very much 0, Not at all
Had-D6	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I look forward with enjoyment to things:	0, As much as I ever did 1, Rather less than I used to 2, Definitely less than I used to 3, Hardly at all
Had-A7	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I get sudden feelings of panic	3, Very often indeed 2, Quite often 1, Not very often 0, Not at all
Had-D7	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I can enjoy a good book or radio or TV program:	0, Often 1, Sometimes 2, Not often 3, Very seldom
Had-A8	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Anxiety Score	Sum(Had-A1,Had-A2,Had-A3,Had-A4,Had-A5,Had-A6,Had-A7)



Had-D8	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Depression Score	Sum(Had-D1,Had-D2,Had-D3,Had-D4,Had-D5,Had-D6,Had-D7)
Had-A9	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Anxiety Result	Normal, Had-A8 <8 Borderline abnormal (borderline case), 7 < Had-A8 < 11 Abnormal (case), Had-A8 >10
Had-D9	Work-plan Definition – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Depression Result	Normal, Had-A9 <8 Borderline abnormal (borderline case), 7 < Had-A9 < 11 Abnormal (case), Had-A9 >10

3.2.1 Barthel autotest

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Barthel-1	Work-plan Definition – Barthel autotest	The Barthel ADL Index	Checkbox	FEEDING	0, unable 5, needs help cutting, spreading butter, etc., or requires modified diet 10, independent
Barthel-2	Work-plan Definition – Barthel autotest	The Barthel ADL Index	Checkbox	BATHING	0, dependent 5, independent (or in shower)
Barthel-3	Work-plan Definition – Barthel autotest	The Barthel ADL Index	Checkbox	GROOMING	0, needs to help with personal care



					5, independent face/hair/teeth/shaving (implements provided)
Barthel-4	Work-plan Definition – Barthel autotest	The Barthel ADL Index	Checkbox	DRESSING	0, dependent 5, needs help but can do about half unaided 10, independent (including buttons, zips, laces, etc.)
Barthel-5	Work-plan Definition – Barthel autotest	The Barthel ADL Index	Checkbox	BOWELS	0, incontinent (or needs to be given enemas) 5, occasional accident 10, continent
Barthel-6	Work-plan Definition – Barthel autotest	The Barthel ADL Index	Checkbox	BLADDER	0, incontinent, or catheterized and unable to manage alone 5, occasional accident 10, continent
Barthel-7	Work-plan Definition – Barthel autotest	The Barthel ADL Index	Checkbox	TOILET USE	0, dependent 5, needs some help, but can do something alone 10, independent (on and off, dressing, wiping)
Barthel-8	Work-plan Definition – Barthel autotest	The Barthel ADL Index	Checkbox	TRANSFERS (BED TO CHAIR AND BACK)	0, unable, no sitting balance 5, major help (one or two people, physical), can sit 10, minor help (verbal or physical) 15, independent
Barthel-9	Work-plan Definition – Barthel autotest	The Barthel ADL Index	Checkbox	MOBILITY (ON LEVEL SURFACES)	0, immobile or < 50 yards 5, wheelchair independent, including corners, > 50 yards



					10, walks with help of one person (verbal or physical) > 50 yards 15, independent (but may use any aid; for example, stick) > 50 yards
Barthel-10	Work-plan Definition – Barthel autotest	The Barthel ADL Index	Checkbox	STAIRS	0, unable 5, needs help (verbal, physical, carrying aid) 10, independent
Barthel-11	Work-plan Definition – Barthel autotest	The Barthel ADL Index	calc	Barthel Index	Sum(Barthel-1,Barthel-2,Barthel-3,Barthel-4,Barthel-5,Barthel-6,Barthel-7,Barthel-8,Barthel-9,Barthel-10)

3.2.1 Self-care auto-test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Scat_epoc1	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	1. I check my weight daily	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_epoc2	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	2. If I experience shortness of breath (dyspnoea) I stop and rest	1, Always / Completely Agree 2, Agree 3, Doubt



					4, Disagree 5, Never / totally disagree
Scat_epoc3	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	3. If my difficulties to breath (dyspnoea) increase, I contact my doctor or nurse	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_epoc4	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	4. If my legs swell more than usual, I contact my doctor or nurse	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_epoc5	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	5. If I gain 2 or more kg in a week, I contact my doctor or nurse	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_epoc6	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	6. I limit the amount of liquids I drink (less than 1.5 or 2 l/day)	1, Always / Completely Agree 2, Agree



					3, Doubt 4, Disagree 5, Never / totally disagree
Scat_epoc7	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	7. I rest for a while during the day	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_epoc8	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	8. If I feel more tired than usual, I contact my doctor or nurse	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_epoc9	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	9. I have a low salt diet	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_epoc10	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	10. I take my medication as prescribed	1, Always / Completely Agree



					2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_epoc11	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	11. I get the flu vaccine every year	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_epoc12	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	12. I do regular physical activity	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_epocTotal	Case Evaluation – Self-care Auto-test	Self-care Auto-test	calc	EPOC Score	SUM(Scat_epoc1, Scat_epoc2, Scat_epoc3, Scat_epoc4, Scat_epoc5, Scat_epoc6, Scat_epoc7, Scat_epoc8,



					Scat_epoc9, Scat_epoc10, Scat_epoc11, Scat_epoc12)
Scat_ic1	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	If I experience shortness of breath (dyspnoea) I stop and rest	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_ic2	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	If my difficulties to breath (dyspnoea) increase, I contact my doctor or nurse	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_ic3	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	If my coughing and mucus production (sputum) increase and mucus becomes nasty, I contact my doctor or nurse	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_ic4	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	I rest for a while during the day	1, Always / Completely Agree



					2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_ic5	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	If I feel more tired than usual, I contact my doctor or nurse	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_ic6	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	I take my medication as prescribed	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_ic7	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	I get the flu vaccine every year	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree



Scat_ic8	Case Evaluation – Self-care Auto-test	Self-care Auto-test	checkbox	I do regular physical activity	1, Always / Completely Agree 2, Agree 3, Doubt 4, Disagree 5, Never / totally disagree
Scat_icTotal	Case Evaluation – Self-care Auto-test	Self-care Auto-test	calc	IC Score	SUM(Scat_ic1, Scat_ic2, Scat_ic3, Scat_ic4, Scat_ic5, Scat_ic6, Scat_ic7, Scat_ic8)

3.3 Work-plan Definition

3.3.1 Prescription Vital Signs Monitoring

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
vsm1	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	Date	Start date	
vsm2	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	Date	End date	
vsm3	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	dropdown	Vital Sign	0, Weight 1, Oxygen Saturation 2, Arterial



					Pressure 3, Hearth rate 4, Temperature
vsm4	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	Dropdown	Units of frequency	0, hours 1, days 2, weeks 3, months
vsm5	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	Text	Frequency	
Vsm6	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	Text	Min. Threshold	
Vsm7	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	text	Max. Threshold	

3.3.2 Prescription Autocheck Health Status

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
autocheckP1	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	Date	Start date	
autocheckP2	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	Date	End date	
autocheckP3	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	Dropdown	Units of frequency	0, hours 1, days 2, weeks 3, months
autocheckP4	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	Text	Frequency	
autocheckP5	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	radio	EPOC Questionnaire	0 No 1 Yes



autocheckP6	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	radio	Cardiac Insufficiency Questionnaire	0 No 1 Yes
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3.3.3 Physical Activity Prescription

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
physicalP1	Work-plan Definition – Physical Prescription	Physical Prescription	Date	Start date	
physicalP2	Work-plan Definition – Physical Prescription	Physical Prescription	Date	End date	
physicalP3	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Number of steps daily	
physicalP4	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Intensity of the activity: Minutes of medium level activity daily.	
physicalP5	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Intensity of the activity: Minutes of high level activity daily.	
physicalP6	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Max. minutes without activity allowed daily.	

3.3.4 Patient Education and Training to the Caregiver

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
educaDef1	Work-plan Definition – education	Education	Radio	Is it need to educate the patient during the hospitalization?	0, No 1, Yes



educaDef2	Work-plan education	Definition	–	Education	radio	Is it need to educate the patient after the hospitalization?	0, No 1, Yes
educaDef3	Work-plan education	Definition	–	Education	Radio	Is it need to educate the caregiver during the hospitalization?	0, No 1, Yes
educaDef4	Work-plan education	Definition	–	Education	radio	Is it need to educate the caregiver after the hospitalization?	0, No 1, Yes

3.3.5 Social Interventions

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Social1	Work-plan Definition – Social intervention	Social Intervention	radio	Facilitar cuidador por horas.	0 No 1 Yes
Social2	Work-plan Definition – Social intervention	Social Intervention	radio	Facilitar tele-asistencia.	0 No 1 Yes
Social3	Work-plan Definition – Social intervention	Social Intervention	radio	Facilitar cuidador por horas.	0 No 1 Yes
Social4	Work-plan Definition – Social intervention	Social Intervention	radio	Facilitar tele-asistencia.	0 No 1 Yes
social5	Work-plan Definition – Social intervention	Social Intervention	radio	Visitas domiciliarias de enfermeria.	0 No 1 Yes
Social6	Work-plan Definition – Social intervention	Social Intervention	radio	Facilitar cuidador por horas.	0 No 1 Yes
Social7	Work-plan Definition – Social intervention	Social Intervention	radio	Visitas domiciliarias de enfermeria.	0 No 1 Yes

3.3.6 Work Plan Definition Agreement

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
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wp_agreement1	Work-plan Definition – Agreement	Agreement	radio	Validation of the prescription of the vital signs monitoring	0 No 1 Yes
wp_Agreement2	Work-plan Definition – Agreement	Agreement	radio	Validation of the auto-check prescription	0 No 1 Yes
wp_Agreement3	Work-plan Definition – Agreement	Agreement	radio	Validation of the physical activity prescription	0 No 1 Yes
wp_Agreement4	Work-plan Definition – Agreement	Agreement	radio	Validation of the education material proposed	0 No 1 Yes
wp_Agreement5	Work-plan Definition – Agreement	Agreement	radio	Validation of the social interventions	0 No 1 Yes

3.4 Work-plan Execution

3.4.1 Vital Signs Monitoring

The data will be obtained directly from the smart devices. The patient will be alert to use the proper device corresponding with the prescription but no form will be showed to be fulfilled.

Reporting process and protocol to be defined by the SACM & SMS responsible.

3.4.2 Answer Autocheck Health Status

Reporting process and protocol to be defined by the SACM & SMS responsible.

3.4.3 Physical Activity Monitoring

The data will be obtained directly from the fitness trackers. The patient will be alert with the prescription and proper alerts but no form will be showed to be fulfilled.

Reporting process and protocol to be defined by the SACM & SMS responsible.

3.4.4 Patient Education and Training to the Caregiver

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
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educaExec1	Work-plan Execution – education			Education	Radio	Has patient's formation done during the hospitalization?	0, No 1, Yes
educaExec2	Work-plan education	Execution	–	Education	radio	Has patient's formation done after the hospitalization?	0, No 1, Yes
educaExec3	Work-plan Execution – education			Education	Radio	Has the caregiver's formation done during the hospitalization?	0, No 1, Yes
educaExec4	Work-plan education	Execution	–	Education	radio	Has the caregiver's formation done during the hospitalization?	0, No 1, Yes

3.5 Discharge

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
discharge1	Discharge – Patient	Patient's Discharge Notification	Radio	Notify the discharge to the patient?	0, No 1, Yes
discharge2	Discharge - Professional	Patient's Discharge	radio	Discharge the patient?	0, No 1, Yes



4. Annexes

4.1 Distance between knee – ankle

Para estimar la talla con la medida de la altura rodilla, existen dos posibilidades:

1. Usar la siguiente tabla para convertir la altura de la rodilla (cm) en altura (m)
2. Aplicar la fórmula que aparece a continuación de la tabla. (TAR 2)

Talla estimada a partir de la longitud de la rodilla

T a l l a (m)	Hombre (18-59 años)	1,94	1,93	1,92	1,91	1,90	1,89	1,88	1,87	1,865	1,86	1,85	1,84	1,83	1,82	1,81
	Hombre (60-90 años)	1,94	1,93	1,92	1,91	1,90	1,89	1,88	1,87	1,86	1,85	1,84	1,83	1,82	1,81	1,80
	Longitud rodilla (cm)	65,0	64,5	64,0	63,5	63,0	62,5	62,0	61,5	61,0	60,5	60,0	59,5	59,0	58,5	58,0
T a l l a (m)	Mujer (18-59 años)	1,89	1,88	1,875	1,87	1,86	1,85	1,84	1,83	1,82	1,81	1,80	1,79	1,78	1,77	1,76
	Mujer (60-90 años)	1,86	1,85	1,84	1,835	1,83	1,82	1,81	1,80	1,79	1,78	1,77	1,76	1,75	1,74	1,73
	Longitud rodilla (cm)	65,0	64,5	64,0	63,5	63,0	62,5	62,0	61,5	61,0	60,5	60,0	59,5	59,0	58,5	58,0
T a l l a (m)	Hombre (18-59 años)	1,80	1,79	1,78	1,77	1,76	1,75	1,74	1,73	1,72	1,71	1,705	1,70	1,69	1,68	1,67
	Hombre (60-90 años)	1,79	1,78	1,77	1,76	1,74	1,73	1,72	1,71	1,70	1,69	1,68	1,67	1,66	1,65	1,64
	Longitud rodilla (cm)	57,5	57,0	56,5	56,0	55,5	55,0	54,5	54,0	53,5	53,0	52,5	52,0	51,5	51,0	50,5
T a l l a (m)	Mujer (18-59 años)	1,75	1,74	1,735	1,73	1,72	1,71	1,70	1,69	1,68	1,67	1,66	1,65	1,64	1,63	1,62
	Mujer (60-90 años)	1,72	1,71	1,70	1,69	1,68	1,67	1,66	1,65	1,64	1,63	1,625	1,62	1,61	1,60	1,59
	Longitud rodilla (cm)	57,5	57,0	56,5	56,0	55,5	55,0	54,5	54,0	53,5	53,0	52,5	52,0	51,5	51,0	50,5
T a l l a (m)	Hombre (18-59 años)	1,66	1,65	1,64	1,63	1,62	1,61	1,60	1,59	1,58	1,57	1,56	1,555	1,55	1,54	1,53
	Hombre (60-90 años)	1,63	1,62	1,61	1,60	1,59	1,58	1,57	1,56	1,55	1,54	1,53	1,52	1,51	1,49	1,48
	Longitud rodilla (cm)	50,0	49,5	49,0	48,5	48,0	47,5	47,0	46,5	46,0	45,5	45,0	44,5	44,0	43,5	43,0
T a l l a (m)	Mujer (18-59 años)	1,61	1,60	1,59	1,585	1,58	1,57	1,56	1,55	1,54	1,53	1,52	1,51	1,50	1,49	1,48
	Mujer (60-90 años)	1,58	1,57	1,56	1,555	1,54	1,53	1,52	1,51	1,50	1,49	1,48	1,47	1,46	1,45	1,44
	Longitud rodilla (cm)	50,0	49,5	49,0	48,5	48,0	47,5	47,0	46,5	46,0	45,5	45,0	44,5	44,0	43,5	43,0

TAR2 =

Woman 19 - 59 years old: $(AR \times 1.86) - (A \times 0.05) + 70.25$

Woman 60 - 80 years old: $(AR \times 1.91) - (A \times 0.17) + 75$

Man 19 - 59 years old: $(AR \times 1.88) + 71.85$

Man 60 – 80 years old: $(AR \times 2.08) + 59.01$

AR = Knee height

A = Age



CONNECARE

Case Study 2 - Definition

Lleida

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
CO	Confidential, only for members of the consortium (including the Commission Services)

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Abstract	This document presents the process diagrams with the questionnaires and forms used in each step of the process. For each one we have added the URL to find the original definition in English or/and Spanish. In case of forms defined by the clinician we have added the questions inside the document.
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Executive Summary

This document presents the process diagrams with the questionnaires and forms used in each step of the process. For each one we have added the URL to find the original definition in English or/and Spanish. In case of forms defined by the clinician we have added the questions inside the document.

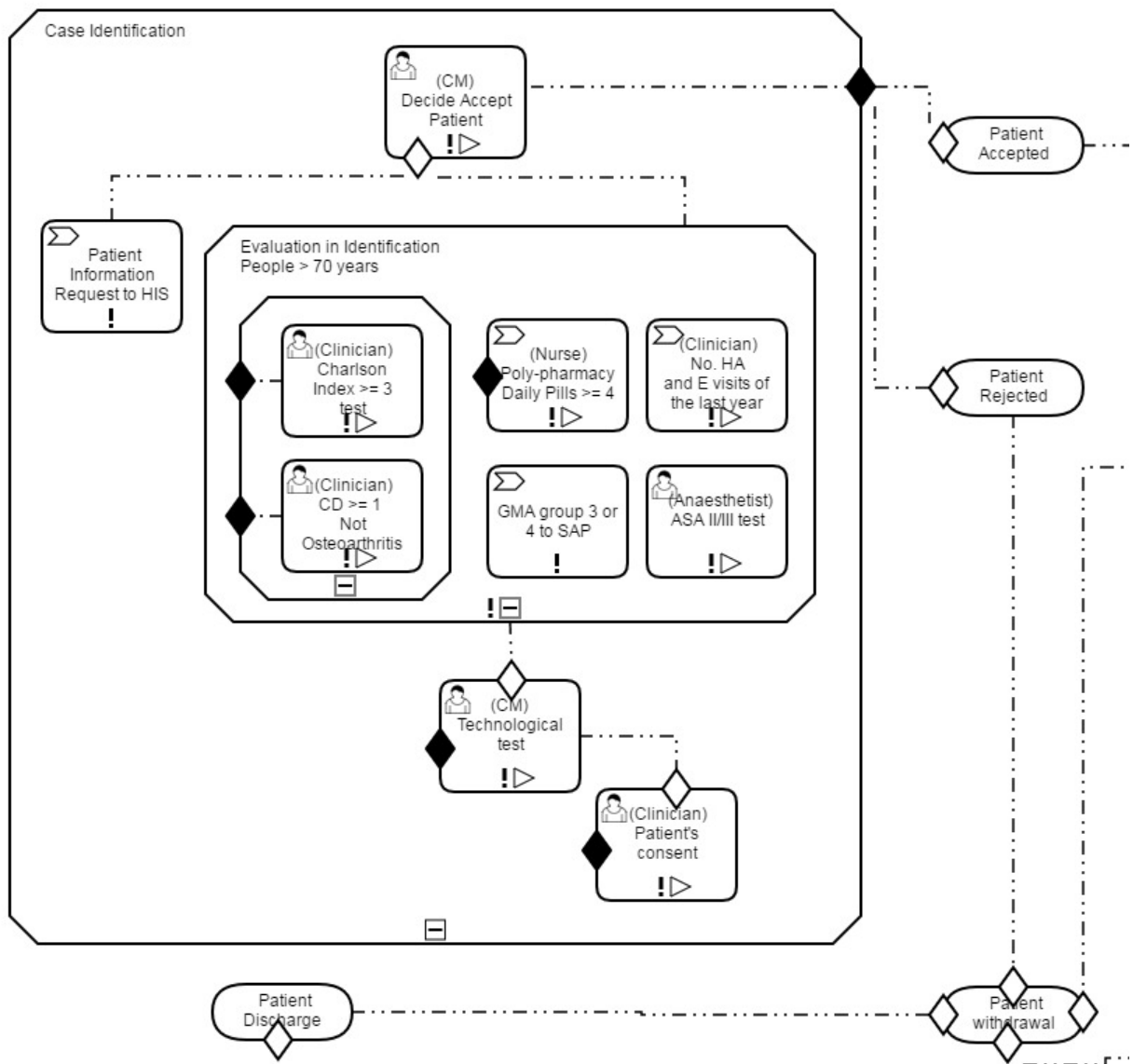
In addition to this information, we have prepared a section call “data collection” which is based on the previous works by TUM and IDIBAPS for the CS3. In this section, you can find more technical information to help to build the SACM forms.



2. Forms Description by steps

This sections presents all the forms used during the process of the CS2 in IRBLLEIDA: Some of this forms will be performed by the SACM and other by the SMS. Each form indicates the CONNECARE Subsystem responsible of each one.

2.1 Case Identification





2.1.1 Supervised Questionnaires

2.1.1.1 Charlson Index

Name
Charlson Comorbidity Index
URL (ENG)
URL (ES)
http://www.infodoctor.org/www/charlson.htm
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
A Charlson Index ≥ 3 will be threshold for inclusion

2.1.1.2 Chronic Diseases

Name
Chronic Diseases
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
If the patient has 3 or more chronic diseases the patient will be accepted.

2.1.1.3 Poly-medication Check

Name
Poly-medication Check
URL (ENG)
--
URL (ES)
--
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments

4 or more pills or drugs per day.

2.1.1.4 GMA

Name
GMA: Group de Morbidity Ajustat
URL (ENG)
URL (ES)
Responsible
Automatic
CONNECARE Subsystem
SACM
Comments
Index stored at the clinical record of the patient.

2.1.1.5 Hospital / Emergency admissions

Name
Hospital / Emergency admissions
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
Number of hospitalizations and emergency admission last year. <ul style="list-style-type: none"> - Hospital admission. In case of surgical patients the admission is detailed from the operating room. - Emergency admission only in case of readmission from emergency. It is not possible to be admitted from emergency in any other case.

2.1.1.6 ASA Physical Status Classification System

Name
ASA Physical Status Classification System
URL (ENG)
https://www.asahq.org/resources/clinical-information/asa-physical-status-classification-system
URL (ES)
http://www.sld.cu/galerias/pdf/sitios/rehabilitacion/sistema_de_clasificacion_asa.pdf
Responsible



Anesthesiologist
CONNECARE Subsystem
SACM
Comments
The patient has to be classified in the classification II or III.

2.1.1.7 Technological Test

Name
Technological Test
URL (ENG)
URL (ES)
Responsible
Case Manager
CONNECARE Subsystem
SACM
Comments
Specific test for the site.
Do you or your caregiver have an internet connection? No/Yes Do you use: smartphone (not only to call) tablet personal computer none of the above Does your primary caregiver use: smartphone (not only to call) tablet personal computer none of the above Any subject answering "Yes" and any answer other than "none of the above" will be considered apt.

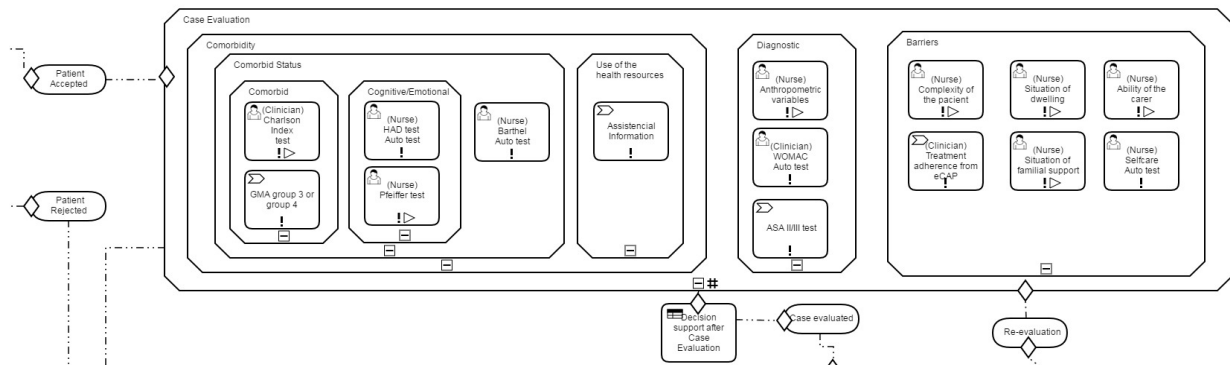
2.1.1.8 Patient's Consent

Name
Patient Consent
URL (ENG)
URL (ES)
Responsible
Clinician



CONNECARE Subsystem
SACM
Comments
Check if the patients agreed to be treated within the process. The form will be provided for the hospital and customized following the corresponding ethics committee.

2.2 Case Evaluation



2.2.1 Supervised Forms

2.2.1.1 Charlson Index

Results from the Case Identification step

2.2.1.2 GMA

Results from the Case Identification step

2.2.1.3 Pfeiffer Test

Name
Short Portable Mental Status Questionnaire (SPMSQ)
URL (ENG)
https://www.healthcare.uiowa.edu/igec/tools/cognitive/SPMSQ.pdf
URL (ES)
http://www.sefap.org/congresos/congreso2009/talleres/presentaciones/Taller4.5.pdf
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
The threshold is a score of 3 or more errors, in the case of people who at least can read and write, and 4 or more for those who do not.



2.2.1.4 *Barthel autotest*

Name
Barthel Index Scoring Form
URL (ENG)
http://www.massgeneral.org/stopstroke/assets/PDFs/barthel_index.pdf
URL (ES)
http://www.hvn.es/enfermeria/ficheros/barthel.pdf
Responsible
Nurse
CONNECARE Subsystem
SMS
Comments
To be fulfilled by the patient.

2.2.1.5 *Assistance Information*

Name
Assistance Information
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
Information obtained automatically by the system from clinical data bases (eCap, etc.).

2.2.1.6 *Anthropometric Variables*

Name
Anthropometric Variables
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
This information is gathered by the nurse without smart devices.



The data stored will be:

- Weight
- Height or distance between knee – ankle (see section 4.1)
- IMC >= 30.

2.2.1.7 ASA Physical Status Classification System

Results from the Case Identification step

2.2.1.8 Situation of dwelling

Name
Dwelling
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
The dwelling is assessed as problem that might impact in the patient health outcome if any of the current situations is identified:
1- Difficult access (absence of elevator in the patient’s dwelling building in patients with bad functional status)
2- Unhealthy or untidy previously reported by social services.

2.2.1.9 Self-care and ability of the career

Name
Ability of the career
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments



The self-care and family support is assessed as a problem that might impact in the patient health outcome if any of the current situations is identified:

- 1/ Unable for self-care reported by social services or unfavourable score in self-care test.
- 2/ Unable carer (reported by social services or by health care professionals, physician or nurse).

2.2.1.10 Complexity of the patient

Name
Complexity of the patient
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
One or more positive items determine a treatment as complex: <ul style="list-style-type: none"> 1. More than 4 tablets / day. 2. Difficult to prepare. 3. Difficult to run or patient not able to run (inhalation technique mistakes are included).

2.2.1.11 Situation of familiar support

Name
Familiar support
URL (ENG)
URL (ES)
Responsible
CONNECARE Subsystem
SACM
Comments
Familiar support is assessed as a problem that might impact in the patient health outcome if any of this situations is identified: <ul style="list-style-type: none"> 1/ Lives alone or spends alone most of the day



2/ The carer has a chronic disease as well.

2.2.2 Self-check Forms

2.2.2.1 Hospital Anxiety and Depression Scale

Name
Hospital Anxiety and Depression Scale
URL (ENG)
http://www.scalesandmeasures.net/files/files/HADS.pdf
URL (ES)
http://www.guiasalud.es/egpc/ansiedad/completa/documentos/anexos/Anexo2_Intrumentos%20de%20medida.pdf
Responsible
Nurse
CONNECARE Subsystem
SMS
Comments
To be fulfilled by the patient

2.2.2.2 The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)

Name
The Western Ontario and McMaster Universities Osteoarthritis Index
URL (ENG)
http://www.performanceptpc.com/paperwork/womac.pdf
URL (ES)
https://www.secot.es/uploads/descargas/formacion/escalas_valoracion/WOMAC_ARTROSIS.pdf
Responsible
Clinician
CONNECARE Subsystem
SMS
Comments
To be fulfilled 1 – 2 months before hospitalization.



TABLA I. Cuestionario de Womac

APARTADO A. Pregunta: ¿Cuánto dolor tiene?	Ninguno	Poco	Bastante	Mucho	Muchísimo
Al andar por terreno llano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Al subir y bajar escaleras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Por la noche en la cama	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Al estar sentado y tumbado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Al estar de pie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APARTADO B. Pregunta: ¿Cuánta rigidez nota?	Ninguno	Poco	Bastante	Mucho	Muchísimo
Después de despertarse por la mañana	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Durante el resto del día	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APARTADO C. Pregunta: ¿Qué grado de dificultad tiene al...?	Ninguno	Poco	Bastante	Mucho	Muchísimo
Bajar escaleras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subir escaleras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levantarse después de estar sentado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Estar de pie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Agacharse para coger algo del suelo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Andar por un terreno llano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entrar y salir del coche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ir de compras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ponerse las medias o los calcetines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levantarse de la cama	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quitarse las medias o los calcetines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Estar tumbado en la cama	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entrar y salir de la ducha/bañera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Estar sentado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sentarse y levantarse del retrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hacer tareas domésticas pesadas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hacer tareas domésticas livianas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.2.2.3 Self-care auto-test

Name
Self-care auto-test
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments



- How often should I perform the rehabilitation exercises?
 - Once a day
 - Never
 - four times a day

- What should I do if the leg swells?

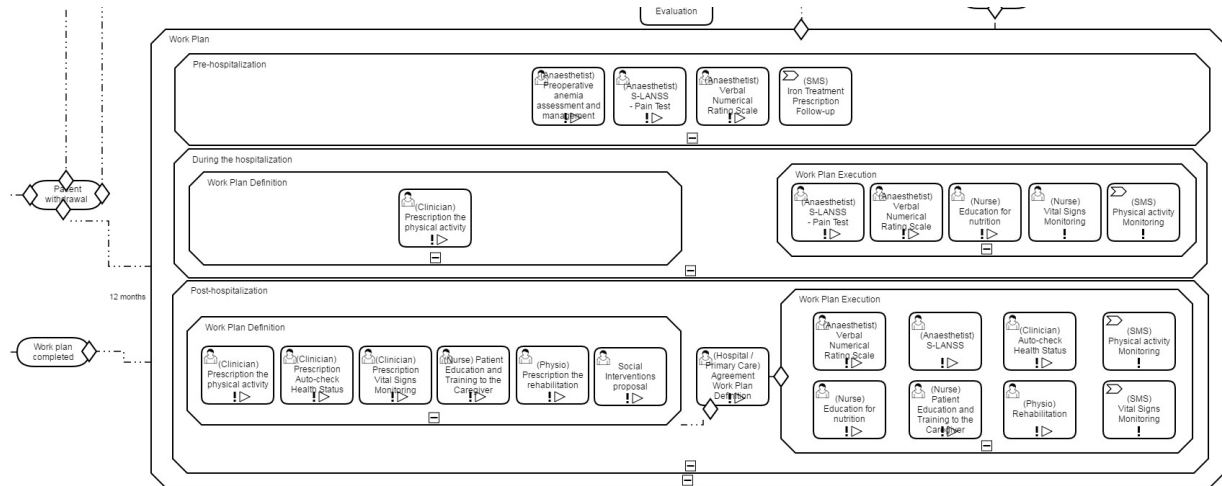


- When should the wound be healed?
 - Every day
 - In case of bleeding or deterioration of the dressing I will go to my reference CAP
 - never
- What is best for my recovery?
 - To bed rest
 - Daily circuit --> Walking, chair or bed rest, exercises
 - To be standing all day
- How can I control pain?
 - Taking double dose of painkiller
 - Follow analgesic regimen correctly and apply ice in case of knee prosthesis
 - Bear the pain
- What if I have a lot of pain despite following analgesic regimen correctly?
 - Bear the pain
 - Taking double dose of painkiller
 - Refer to your CAP medical doctor

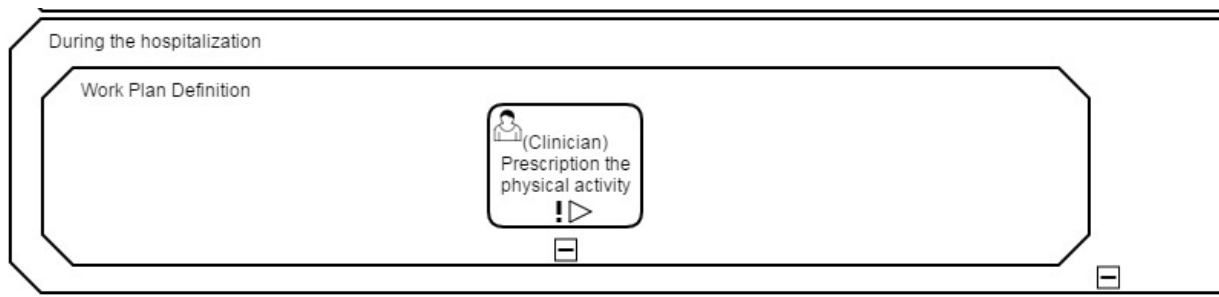
The annex 4.2 is the Catalan version.



2.3 Work-plan Definition



2.3.1 Definition of interventions during the hospitalization



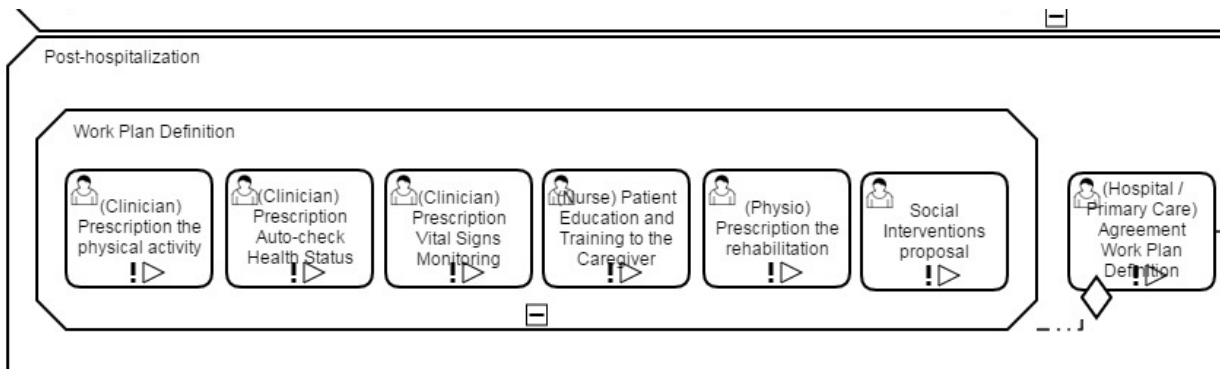
2.3.1.1 Physical Activity Prescription

Name
Physical Activity Prescription
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS which is the responsible to manage prescriptions and the patient's results. The data need to prescribe physical activity is:



- Start date.
- End date.
- Number of steps daily.
- Intensity of the activity.
 - o Minutes of low level activity daily.
 - o Minutes of medium level activity daily.
 - o Minutes of high level activity daily.
- Max. minutes without activity allowed daily.

2.3.2 Definition of interventions post-hospitalization



2.3.2.1 Physical Activity Prescription

Name
Physical Activity Prescription
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS which is the responsible to manage prescriptions and the patient's results. The data need to prescribe physical activity is: <ul style="list-style-type: none"> - Start date. - End date. - Number of steps daily. - Intensity of the activity. <ul style="list-style-type: none"> o Minutes of low level activity daily. o Minutes of medium level activity daily. o Minutes of high level activity daily. - Max. minutes without activity allowed daily.



2.3.2.2 Auto-check Health Status Prescription

Name
Autocheck Health Status Prescription
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS which is the responsible to manage prescriptions and the patient's results. The data to prescribe the test is: <ul style="list-style-type: none"> - Start date. - End date. - Frequency of the test (in hours / days / weeks / months).

2.3.2.3 Rehabilitation Prescription

Name
Rehabilitation Prescription
URL (ENG)
URL (ES)
Responsible
Physiotherapist
CONNECARE Subsystem
SACM
Comments
This task only prescribes the rehabilitation sessions which will be performed with the Physiotherapist. The data need to prescribe physical activity is: <ul style="list-style-type: none"> - Start date. - End date. - Frequency of the rehabilitation sessions (in hours / days / weeks / months). This prescription will be included into the patient agenda in the SMS.



2.3.2.4 Prescription Vital Signs Monitoring

Name
Prescription Vital Signs Monitoring
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS which is the responsible to manage prescriptions and the patient's results. The signs that can be monitored are: <ul style="list-style-type: none"> - Weight. - Oxygen Saturation. - Hearth rate. In each of the variables the prescription needs to indicate: <ul style="list-style-type: none"> - Start date. - End date. - Vital sign to be monitored (one and only one). - Frequency of the measurement (in hours / days / weeks / months). TO BE DEFINED - Thresholds (min / max) to rise an alarm.

2.3.2.5 Social Interventions

Name
Social Interventions proposal
URL (ENG)
URL (ES)
Responsible
Social career
CONNECARE Subsystem
SACM
Comments
Form with the different intervention from the social point of view: <ul style="list-style-type: none"> • Provide caregiver for a given amount of hours. • Provide tele-assistance. • Home visits by the nurse. • Home visits by the doctor. • Provide access to medical box with the week medication.

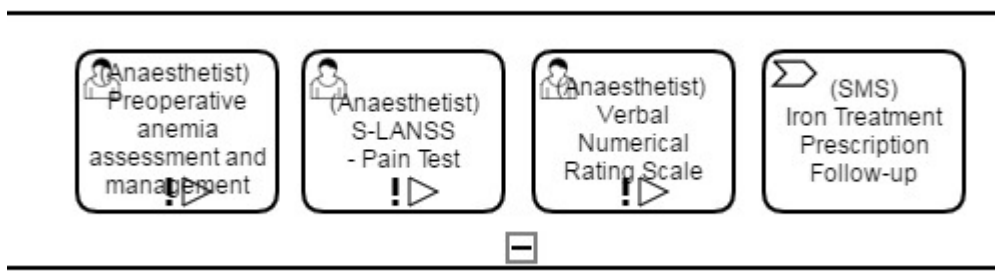


2.3.2.6 Work Plan Definition Agreement

Name
Work Plan Definition Agreement
URL (ENG)
URL (ES)
Responsible
All the professional staff
CONNECARE Subsystem
SACM
Comments
Once all the interventions are defined they should be accepted by all the professionals involved into the process. The form consist in the next validation fields: <ul style="list-style-type: none"> - Validation of the physical activity prescription - Validation of the nutrition prescription - Validation of the auto-check prescription - Validation of the rehabilitation prescription - Validation of the education material proposed - Validation of the prescription of the vital sings monitoring. - Validation of the social interventions In each field should exist the possibility to see the intervention proposal. The possible values are: <ul style="list-style-type: none"> - Accepted by the hospital and primary care - Rejected by the hospital and primary care - Rejected by the hospital - Rejected by primary care

2.4 Work-plan Execution

2.4.1 Interventions execution pre-hospitalization





2.4.1.1 Preoperative anemia assessment and management

Name
Preoperative anemia assessment and management
URL (ENG)
URL (ES)
Responsible
Anaesthesiologist
CONNECARE Subsystem
SACM
Comments
<p>Form with two fields:</p> <ul style="list-style-type: none"> - Value of ferritin and Hemoglobin. - The patient is part of the saving sang program: yes/no. <p>In case of hemoglobin under 13 the anemia recuperation process start and part of it is the prescription of a treatment with iron. The data need to prescribe the treatment is:</p> <ul style="list-style-type: none"> - Start date. - End date. - In blood treatment? - Pill treatment? <ul style="list-style-type: none"> o In case of pill treatment: o Num of pills. o Frequency (daily, weekly, etc.) o Associated to meals (breakfast, lunch, diner, etc.)

2.4.1.2 High Blood Pressure Control

Name
High Blood Pressure Control
URL (ENG)
URL (ES)
Responsible
Primary Care
CONNECARE Subsystem
SACM
Comments
<p>The clinician from the primary care center should monitor the blood pressure and report the status inside the normal parameters.</p> <p>In case of not properly controlled blood pressure the patient cannot pass to the next step.</p>



2.4.1.3 Diabetes Control

Name
Diabetes Control
URL (ENG)
URL (ES)
Responsible
Primary Care
CONNECARE Subsystem
SACM
Comments
The clinician from the primary care center should monitor the diabetes and report the status inside the normal parameters.
In case of not properly controlled diabetes the patient cannot pass to the next step.

2.4.1.4 Verbal Numerical Rating Scale before hospitalization (Pain Test)

Name
Verbal Numerical Rating Scale during hospitalization
URL (ENG)
URL (ES)
Responsible
Anaesthesiologist
CONNECARE Subsystem
SACM
Comments
It should be answered only one time before the hospitalization.
THE NUMERICAL SCALE (NS): Numbered scale ranging from 0 to 10, where 0 corresponds to absence of pain and 10 to maximum pain intensity. The patient selects the number that better suits the intensity of the symptom.



LA ESCALA NUMÉRICA (EN):

Escala numerada del 1-10, donde 0 es la ausencia y 10 la mayor intensidad, el paciente selecciona el número que mejor evalúa la intensidad del síntoma.

0	1	2	3	4	5	6	7	8	9	10
<i>Sin dolor</i>										<i>Máximo dolor</i>

A value over 5 raises an alarm.

2.4.1.5 S-LANSS during hospitalization (Paint Test)

Name
S-LANSS
URL (ENG)
URL (ES)
Responsible
Anaesthesiologist
CONNECARE Subsystem
SACM
Comments
It should be answered only one time before the hospitalization.



S-LANSS

- 1. In the area where you have pain, do you also have 'pins and needles', tingling or prickling sensations?**

a) NO – I don't get these sensations (0)
b) YES – I get these sensations often (5)
- 2. Does the painful area change colour (perhaps looks mottled or more red) when the pain is particularly bad?**

a) NO – The pain does not affect the colour of my skin (0)
b) YES – I have noticed that the pain does make my skin look different from normal (5)
- 3. Does your pain make the affected skin abnormally sensitive to touch? Getting unpleasant sensations or pain when lightly stroking the skin might describe this.**

a) NO – The pain does not make my skin in that area abnormally sensitive to touch (0)
b) YES – My skin in that area is particularly sensitive to touch (3)
- 4. Does your pain come on suddenly and in bursts for no apparent reason when you are completely still? Words like 'electric shocks', jumping and bursting might describe this.**

a) NO – My pain doesn't really feel like this (0)
b) YES – I get these sensations often (2)
- 5. In the area where you have pain, does your skin feel unusually hot like a burning pain?**

a) NO – I don't have burning pain (0)
b) YES – I get burning pain often (1)
- 6. Gently rub the painful area with your index finger and then rub a non-painful area (for example, an area of skin further away or on the opposite side from the painful area). How does this rubbing feel in the painful area?**

a) The painful area feels no different from the non-painful area (0)
b) I feel discomfort, like pins and needles, tingling or burning in the painful area that is different from the non-painful area (5)
- 7. Gently press on the painful area with your finger tip then gently press in the same way onto a non-painful area (the same non-painful area that you chose in the last question). How does this feel in the painful area?**

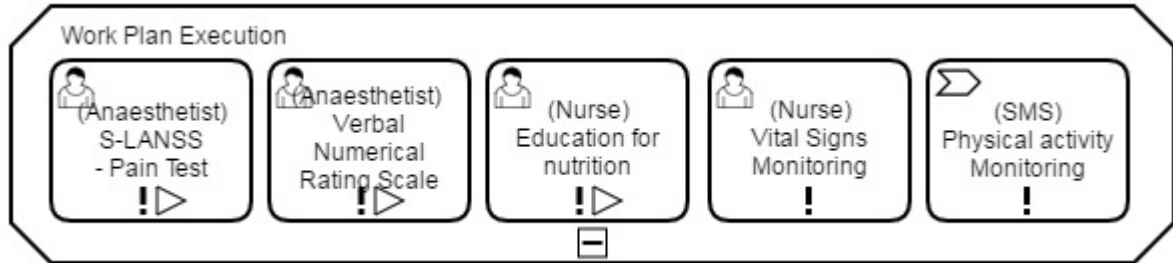
a) The painful area does not feel different from the non-painful area (0)
b) I feel numbness or tenderness in the painful area that is different from the non-painful area (3)

Scoring: a score of 12 or more suggests pain of predominantly neuropathic origin

A value over 12 raises an alarm.



2.4.2 Interventions execution during the hospitalization



2.4.2.1 Nutritional Education

Name
Nutrition Education
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
The nurse does educational events with the patients and the caregivers during the hospitalization. This form recollects the status of these events.

2.4.2.2 Physical Activity Monitoring

The data will be obtained directly from the fitness trackers. The patient will be alert with the prescription and proper alerts but no form will be showed to be fulfilled.

2.4.2.3 Vital Sign Monitoring

Name
Vital Sign Monitoring
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments



During the hospitalization the nurse will check the status of the patient and introduce the different parameters into the system by this form.

2.4.2.4 Verbal Numerical Rating Scale during hospitalization (Paint Test)

Name																						
Verbal Numerical Rating Scale during hospitalization																						
URL (ENG)																						
URL (ES)																						
Responsible																						
Anaesthesiologist																						
CONNECARE Subsystem																						
SACM																						
Comments																						
Every 8h during the hospitalization in movement and resting.																						
THE NUMERICAL SCALE (NS): Numbered scale ranging from 0 to 10, where 0 corresponds to absence of pain and 10 to maximum pain intensity. The patient selects the number that better suits the intensity of the symptom.																						
 <u>LA ESCALA NUMÉRICA (EN):</u> Escala numerada del 1-10, donde 0 es la ausencia y 10 la mayor intensidad, el paciente selecciona el número que mejor evalúa la intensidad del síntoma.																						
<table border="1"> <tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td><i>Sin dolor</i></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><i>Máximo dolor</i></td></tr> </table>	0	1	2	3	4	5	6	7	8	9	10	<i>Sin dolor</i>										<i>Máximo dolor</i>
0	1	2	3	4	5	6	7	8	9	10												
<i>Sin dolor</i>										<i>Máximo dolor</i>												
A value over 5 raises an alarm.																						

2.4.2.5 S-LANSS during hospitalization (Paint Test)

Name
S-LANSS
URL (ENG)
URL (ES)
Responsible
Anaesthesiologist



CONNECARE Subsystem

SACM

Comments

Last day of hospitalization.

S-LANSS

1. **In the area where you have pain, do you also have 'pins and needles', tingling or pricking sensations?**

a)	NO – I don't get these sensations	(0)
b)	YES – I get these sensations often	(5)

2. **Does the painful area change colour (perhaps looks mottled or more red) when the pain is particularly bad?**

a)	NO – The pain does not affect the colour of my skin	(0)
b)	YES – I have noticed that the pain does make my skin look different from normal	(5)

3. **Does your pain make the affected skin abnormally sensitive to touch? Getting unpleasant sensations or pain when lightly stroking the skin might describe this.**

a)	NO – The pain does not make my skin in that area abnormally sensitive to touch	(0)
b)	YES – My skin in that area is particularly sensitive to touch	(3)

4. **Does your pain come on suddenly and in bursts for no apparent reason when you are completely still? Words like 'electric shocks', jumping and bursting might describe this.**

a)	NO – My pain doesn't really feel like this	(0)
b)	YES – I get these sensations often	(2)

5. **In the area where you have pain, does your skin feel unusually hot like a burning pain?**

a)	NO – I don't have burning pain	(0)
b)	YES – I get burning pain often	(1)

6. **Gently rub the painful area with your index finger and then rub a non-painful area (for example, an area of skin further away or on the opposite side from the painful area). How does this rubbing feel in the painful area?**

a)	The painful area feels no different from the non-painful area	(0)
b)	I feel discomfort, like pins and needles, tingling or burning in the painful area that is different from the non-painful area	(5)

7. **Gently press on the painful area with your finger tip then gently press in the same way onto a non-painful area (the same non-painful area that you chose in the last question). How does this feel in the painful area?**

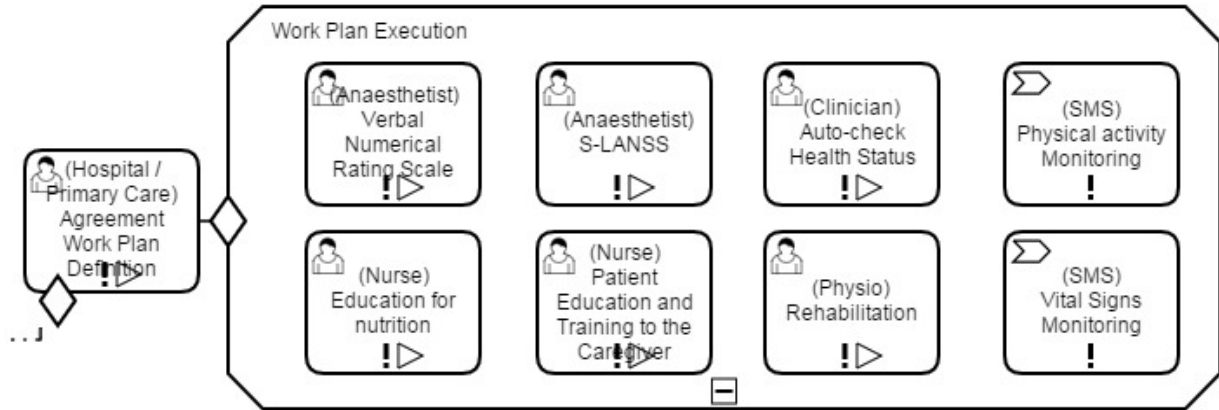
a)	The painful area does not feel different from the non-painful area	(0)
b)	I feel numbness or tenderness in the painful area that is different from the non-painful area	(3)

Scoring: a score of 12 or more suggests pain of predominantly neuropathic origin

A value over 12 raises an alarm.



2.4.1 Interventions execution post-hospitalization



2.4.1.1 Nutritional Education

Name
Nutrition Education
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
The nurse will send information about nutrition to the patient via SACM that will be showed to the patient in the SMS.

2.4.1.2 Physical Activity Monitoring

The data will be obtained directly from the fitness trackers. The patient will be alert with the prescription and proper alerts but no form will be showed to be fulfilled.

2.4.1.3 Vital Signs Monitoring

The data will be obtained directly from the smart devices. The patient will be alert to use the proper device corresponding with the prescription but no form will be showed to be fulfilled.

2.4.1.4 Rehabilitation

Name
Rehabilitation
URL (ENG)



URL (ES)
Responsible Physiotherapist
CONNECARE Subsystem SACM
Comments The physiotherapist does rehabilitation events with the patients. This form recollects the status of these events.

2.4.1.5 Verbal Numerical Rating Scale after hospitalization (Paint Test)

Name Verbal Numerical Rating Scale during hospitalization																						
URL (ENG)																						
URL (ES)																						
Responsible Anaesthesiologist																						
CONNECARE Subsystem SMS																						
Comments <p>1st & 2nd week: every 24h during in movement and resting. Until 2nd month: every week in movement and resting. From 2nd month to 12th month: once a month in movement and resting.</p> <p>THE NUMERICAL SCALE (NS): Numbered scale ranging from 0 to 10, where 0 corresponds to absence of pain and 10 to maximum pain intensity. The patient selects the number that better suits the intensity of the symptom.</p> <p><u>LA ESCALA NUMÉRICA (EN):</u> Escala numerada del 1-10, donde 0 es la ausencia y 10 la mayor intensidad, el paciente selecciona el número que mejor evalúa la intensidad del síntoma.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> <tr> <td><i>Sin dolor</i></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><i>Máximo dolor</i></td> </tr> </table> <p>A value over 5 raises an alarm.</p>	0	1	2	3	4	5	6	7	8	9	10	<i>Sin dolor</i>										<i>Máximo dolor</i>
0	1	2	3	4	5	6	7	8	9	10												
<i>Sin dolor</i>										<i>Máximo dolor</i>												



2.4.1.6 S-LANSS after hospitalization (Paint Test)

Name
S-LANSS
URL (ENG)
URL (ES)
Responsible
Anaesthesiologist
CONNECARE Subsystem
SMS
Comments
Once time the 2 nd & 4 th week and the 3 rd , 6 th and 12 th month.



S-LANSS

1. **In the area where you have pain, do you also have 'pins and needles', tingling or prickling sensations?**
 - a) NO – I don't get these sensations (0)
 - b) YES – I get these sensations often (5)

2. **Does the painful area change colour (perhaps looks mottled or more red) when the pain is particularly bad?**
 - a) NO – The pain does not affect the colour of my skin (0)
 - b) YES – I have noticed that the pain does make my skin look different from normal (5)

3. **Does your pain make the affected skin abnormally sensitive to touch? Getting unpleasant sensations or pain when lightly stroking the skin might describe this.**
 - a) NO – The pain does not make my skin in that area abnormally sensitive to touch (0)
 - b) YES – My skin in that area is particularly sensitive to touch (3)

4. **Does your pain come on suddenly and in bursts for no apparent reason when you are completely still? Words like 'electric shocks', jumping and bursting might describe this.**
 - a) NO – My pain doesn't really feel like this (0)
 - b) YES – I get these sensations often (2)

5. **In the area where you have pain, does your skin feel unusually hot like a burning pain?**
 - a) NO – I don't have burning pain (0)
 - b) YES – I get burning pain often (1)

6. **Gently rub the painful area with your index finger and then rub a non-painful area (for example, an area of skin further away or on the opposite side from the painful area). How does this rubbing feel in the painful area?**
 - a) The painful area feels no different from the non-painful area (0)
 - b) I feel discomfort, like pins and needles, tingling or burning in the painful area that is different from the non-painful area (5)

7. **Gently press on the painful area with your finger tip then gently press in the same way onto a non-painful area (the same non-painful area that you chose in the last question). How does this feel in the painful area?**
 - a) The painful area does not feel different from the non-painful area (0)
 - b) I feel numbness or tenderness in the painful area that is different from the non-painful area (3)

Scoring: a score of 12 or more suggests pain of predominantly neuropathic origin

A value over 12 raises an alarm.

2.4.1.7 Autocheck Health Status

Name
Autocheck Health Status
URL (ENG)



URL (ES)

Responsible

Clinician

CONNECARE Subsystem

SMS

Comments

The data will be sent to the SMS which is the responsible to manage prescriptions and the patient's results.

Breathing	<input type="checkbox"/> I breathe worse than usual*	<input type="checkbox"/> No changes in breathing pattern
Vomit	<input type="checkbox"/> I vomited	<input type="checkbox"/> I have not vomited
Dizziness	<input type="checkbox"/> I feel dizzy often*	<input type="checkbox"/> I do not get dizzy
Eating	<input type="checkbox"/> I eat less than usual*	<input type="checkbox"/> No changes in eating pattern
Drinking	<input type="checkbox"/> I drink less than usual	<input type="checkbox"/> No changes in drinking pattern
Urinating	<input type="checkbox"/> I urinate less than usual	<input type="checkbox"/> No changes in urinating pattern
Defecating	<input type="checkbox"/> I cannot defecate*	<input type="checkbox"/> No changes in defecating pattern
Moving	<input type="checkbox"/> I move less than usual	<input type="checkbox"/> No changes in moving pattern
Temperature	<input type="checkbox"/> I have fever (>37°)*	<input type="checkbox"/> I don't have fever
Resting and sleeping	<input type="checkbox"/> I have more troubles resting / sleeping	<input type="checkbox"/> No changes in my resting / sleeping pattern
Body cleansing	<input type="checkbox"/> I need help	<input type="checkbox"/> I do it on my own
Dressing	<input type="checkbox"/> I need help	<input type="checkbox"/> I do it on my own

*** Any answer marked in red color means alarm. The alarm should indicate the number of items that raise it.**

(The annex 4.3 is the Catalan version.)

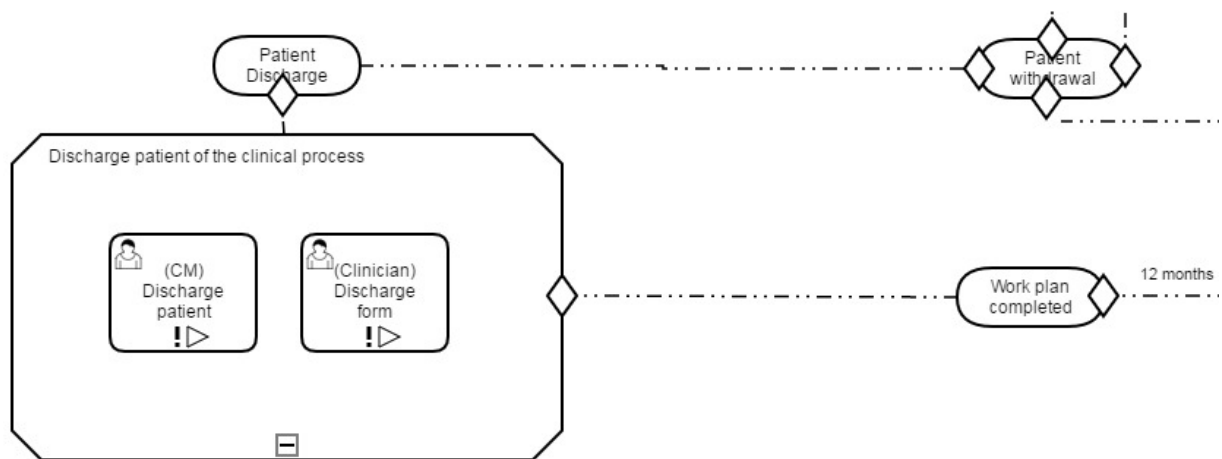
This questionnaire should be answered every day during the 1st week. During the 2nd and the 3th it should be answered every 48h.



2.4.1.8 Patient Education and Training to the Caregiver

Name
Education actions for patients and caregivers
URL (ENG)
URL (ES)
Responsible
Nurse
CONNECARE Subsystem
SACM
Comments
The nurse does educational events with the patients and the caregivers during the hospitalization and after it. This form recollects the status of these events.

2.5 Discharge



2.5.1 Supervised Forms

2.5.1.1 Discharge Patient Form

Name
Work Plan Definition Agreement
URL (ENG)
URL (ES)



Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
The clinical staff notifies the discharge to the patient.

2.5.1.2 Discharge Form

Name
Work Plan Definition Agreement
URL (ENG)
URL (ES)
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
The clinical staff notifies the discharge to the system.



3. Data Collection

3.1 Case Identification

3.1.1 Charlson Index

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ch1	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Myocardial infarct	0, No 1, Yes
ch2	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Congestive heart failure	0, No 1, Yes
ch3	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Peripheral vascular disease	0, No 1, Yes
ch4	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Cerebrovascular disease (except hemiplegia)	0, No 1, Yes
ch5	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Dementia	0, No 1, Yes
ch6	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Chronic pulmonary disease	0, No 1, Yes
ch7	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Connective tissue disease	0, No 1, Yes
ch8	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Ulcer disease	0, No 1, Yes
ch9	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Mild liver disease	0, No 1, Yes
ch10	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Diabetes (without complications)	0, No 1, Yes
ch11	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Diabetes with end organ damage	0, No 1, Yes
ch12	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Hemiplegia	0, No 1, Yes



ch13	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Moderate or severe renal disease	0, No 1, Yes
ch14	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Solid tumor (non metastatic)	0, No 1, Yes
ch15	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Leukemia	0, No 1, Yes
ch16	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Lymphoma, Multiple myeloma	0, No 1, Yes
ch17	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Moderate or severe liver disease	0, No 1, Yes
ch18	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Metastatic solid tumor	0, No 1, Yes
ch19	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	AIDS	0, No 1, Yes
ch20	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 50-59	0, No 1, Yes
ch21	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 60-69	0, No 1, Yes
ch22	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 70-79	0, No 1, Yes
ch23	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 80-89	0, No 1, Yes
ch24	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 90-99	0, No 1, Yes
ch25	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	calc	Charlson Comorbidity Index	sum([ch1]*1, [ch2]*1, [ch3]*1, [ch4]*1, [ch5]*1, [ch6]*1, [ch7]*1, [ch8]*1, [ch9]*1, [ch10]*1, [ch11]*2, [ch12]*2, [ch13]*2, [ch14]*2, [ch15]*2, [ch16]*2, [ch17]*3, [ch18]*6, [ch19]*6, [ch20]*1, [ch21]*2,



					[ch22]*3, [ch24]*5)	[ch23]*4,
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3.1.2 Chronic Diseases

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
cd1	Case identification – Chronic Diseases	Chronic Diseases	radio	Has the patient more than 3 Chronic Diseases?	0, No 1, Yes

3.1.3 Poly-medication Check

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
pmed1	Case identification – poly-medication	Poly-Medication Check	radio	Does the patient take 4 or more pills or drugs per day?	0, No 1, Yes

3.1.1 GMA

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
gma1	Case identification – gma	GMA	calculated	GMA Index	0, Group 1 0, Group 2 1, Group 3 1, Group 4 0, Group 5



3.1.1 Hospital / Emergency admissions

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
admissions1	Case identification – Hospital / Emergency admissions	Hospital / Emergency admissions	number	How many times has the patient been admitted to hospital last year?	
admissions2	Case identification – Hospital / Emergency admissions	Hospital / Emergency admissions	number	How many times has the patient been re-admitted to hospital from emergency last year?	

3.1.1 ASA Physical Status Classification System

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ASA1	Case identification – ASA	ASA Physical Status Classification System	radio	ASA PS Classification	1, ASA I: A normal healthy patient 2, ASA II: A patient with mild systemic disease 3, ASA III: A patient with severe systemic disease 4, ASA IV: A patient with severe systemic disease that is a constant threat to life 5, ASA V: A moribund patient who is not expected to survive without the operation 6, ASA VI: A declared brain-dead patient whose organs are being removed for donor purposes



3.1.2 Technological Test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
tech1	Case identification – Technological Test	Technological Test	radio	Do you or your caregiver have an internet connection?	0, No 1, Yes
Tech2	Case identification – Technological Test	Technological Test	checkbox	Do you use:	1, smartphone (not only to call). 2, Tablet. 3, personal computer 0, none of the above
Tech3	Case identification – Technological Test	Technological Test	radio	Does your primary caregiver use:	1, smartphone (not only to call). 2, Tablet. 3, personal computer 0, none of the above
Tech4	Case identification – Technological Test	Technological Test	calc	Technological test result	Sum ([tech1],[tech2],[tech3]) == 0 , No Apte Sum ([tech1],[tech2],[tech3]) >0 , Apte

3.1.3 Patient's Consent

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
pConsent1	Case identification – Patient's Consent	Patient's Consent	radio	Do you agree to participate into the process described in the document?	0, No 1, Yes



3.2 Case Evaluation

3.2.1 Charlson Index

In the Case Evaluation step this data will come from the Case Identification's Charlson form.

3.2.2 GMA Index

In the Case Evaluation step this data will come from the Case Identification's GMA form.

3.2.3 Pfeiffer Test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
pfeiffer1	Case evaluation – Comorbidity - Pfeiffer	Pfeiffer Index	dropdown	Number of errors	0 – 10
pfeiffer2	Case evaluation – Comorbidity - Pfeiffer	Pfeiffer Index	calc	Pfeiffer Index	pfeiffer1 equals (0, 1, 2) -> “Intact Intellectual Functioning” pfeiffer1 equals (3, 4) -> “Mild Intellectual Impairment” pfeiffer1 equals (5, 6, 7) -> “Moderate Intellectual Impairment” pfeiffer1 equals (8, 9, 10) -> “Severe Intellectual Impairment”

3.2.4 Assistance Information

Obtained from the clinical infrastructure. To be defined in conjunction with the IT staff of the hospital the integration partner (Eurecat) and TUM.

3.2.1 Anthropometric Variables

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Anthropometric1	Case evaluation – Anthropometric Variables	Anthropometric Variables	Number	Weight	



Anthropometric2	Case evaluation – Anthropometric Variables	Anthropometric Variables	Number	Height or distance between knee – ankle	
Anthropometric3	Case evaluation – Anthropometric Variables	Anthropometric Variables	radio	IMC >= 30	1, No 0, Yes

3.2.2 Situation of dwelling

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
dwelling1	Case evaluation – Social - Dwelling	Dwelling	Radio	Complex Access to the patient’s house	0, No 1, Yes
dwelling2	Case evaluation – Social - Dwelling	Dwelling	radio	Unhealthy or untidy habits	0, No 1, Yes

3.2.3 Self-care and ability of the career

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
career1	Case evaluation – Social – Career ability	Career ability	Radio	Unable for self-care reported by social services or unfavourable score in self-care test.	0, No 1, Yes
career2	Case evaluation – Social – Career ability	Career ability	radio	Caved or unable carer (reported by social services or by health care professionals)	0, No 1, Yes

3.2.4 Complexity of the patient

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
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Name		Label			
complexity1	Case evaluation – Social – Complexity of the patient	Complexity of the patient	Radio	Has the treatment more than 4 tablets/day?	0, No 1, Yes
complexity2	Case evaluation – Social – Complexity of the patient	Complexity of the patient	radio	Is the treatment hard to prepare?	0, No 1, Yes
Complexity3	Case evaluation – Social – Complexity of the patient	Complexity of the patient	radio	Is the treatment easy to run? Is able the patient to run it? (Inhalation technique mistakes are included).	1, No 0, Yes
Complexity4	Case evaluation – Social – Complexity of the patient	Complexity of the patient	Calc	Complexity	0, Sum([complexity2],[complexity2],[complexity2]) == 0 1, Sum([complexity2],[complexity2],[complexity2]) >0

3.2.5 Situation of family support

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
family1	Case evaluation – Family Support	Family Support	Radio	Lives alone or spends alone most of the day?	0, No 1, Yes
family1	Case evaluation – Family Support	Family Support	Radio	Has the carer a chronic disease as well?	0, No 1, Yes



3.2.6 Hospital Anxiety and Depression Scale

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Had-A1	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I feel tense or 'wound up'	3, Most of the time 2, A lot of the time 1, From time to time, occasionally 0, Not at all
Had-D1	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I still enjoy the things I used to enjoy:	0, Definitely as much 1, Not quite so much 2, Only a little 3, Hardly at all
Had-A2	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I get a sort of frightened feeling as if something awful is about to happen:	3, Very definitely and quite badly 2, Yes, but not too badly 1, A little, but it doesn't worry me 0, Not at all
Had-D2	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I can laugh and see the funny side of things:	0, As much as I always could 1, Not quite so much now 2, Definitely not so much now 3, Not at all
Had-A3	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	Worrying thoughts go through my mind:	3, A great deal of the time 2, A lot of the time



					1, From time to time, but not too often 0, Only occasionally
Had-D3	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I feel cheerful:	3, Not at all 2, Not often 1, Sometimes 0, Most of the time
Had-A4	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I can sit at ease and feel relaxed:	0, Definitely 1, Usually 2, Not Often 3, Not at all
Had-D4	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I feel as if I am slowed down:	3, Nearly all the time 2, Very often 1, Sometimes 0, Not at all
Had-A5	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I get a sort of frightened feeling like 'butterflies' in the stomach:	0, Not at all 1, Occasionally 2, Quite Often 3, Very Often
Had-D5	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I have lost interest in my appearance:	3, Definitely 2, I don't take as much care as I should 1, I may not take quite as much care 0, I take just as much care as ever
Had-A6	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I feel restless as I have to be on the move:	3, Very much indeed 2, Quite a lot 1, Not very much



					0, Not at all
Had-D6	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I look forward with enjoyment to things:	0, As much as I ever did 1, Rather less than I used to 2, Definitely less than I used to 3, Hardly at all
Had-A7	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I get sudden feelings of panic	3, Very often indeed 2, Quite often 1, Not very often 0, Not at all
Had-D7	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	Checkbox	I can enjoy a good book or radio or TV program:	0, Often 1, Sometimes 2, Not often 3, Very seldom
Had-A8	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Anxiety Score	Sum(Had-A1,Had-A2,Had-A3,Had-A4,Had-A5,Had-A6,Had-A7)
Had-D8	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Depression Score	Sum(Had-D1,Had-D2,Had-D3,Had-D4,Had-D5,Had-D6,Had-D7)
Had-A9	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Anxiety Result	Normal, Had-A8 <8 Borderline abnormal (borderline case), 7 < Had-A8 < 11 Abnormal (case), Had-A8 >10



Had-D9	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Depression Result	Normal, Had-A9 <8 Borderline abnormal (borderline case), 7 < Had-A9 < 11 Abnormal (case), Had-A9 >10
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3.2.7 Barthel autotest

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Barthel-1	Case Evaluation – Barthel autotest	The Barthel ADL Index	Checkbox	FEEDING	0, unable 5, needs help cutting, spreading butter, etc., or requires modified diet 10, independent
Barthel-2	Case Evaluation – Barthel autotest	The Barthel ADL Index	Checkbox	BATHING	0, dependent 5, independent (or in shower)
Barthel-3	Case Evaluation – Barthel autotest	The Barthel ADL Index	Checkbox	GROOMING	0, needs to help with personal care 5, independent face/hair/teeth/shaving (implements provided)
Barthel-4	Case Evaluation – Barthel autotest	The Barthel ADL Index	Checkbox	DRESSING	0, dependent 5, needs help but can do about half unaided 10, independent (including buttons, zips, laces, etc.)
Barthel-5	Case Evaluation – Barthel autotest	The Barthel ADL Index	Checkbox	BOWELS	0, incontinent (or needs to be given enemas) 5, occasional accident



						10, continent
Barthel-6	Case Evaluation – Barthel autotest	The Barthel ADL Index	Checkbox	BLADDER	0, incontinent, or catheterized and unable to manage alone 5, occasional accident 10, continent	
Barthel-7	Case Evaluation – Barthel autotest	The Barthel ADL Index	Checkbox	TOILET USE	0, dependent 5, needs some help, but can do something alone 10, independent (on and off, dressing, wiping)	
Barthel-8	Case Evaluation – Barthel autotest	The Barthel ADL Index	Checkbox	TRANSFERS (BED TO CHAIR AND BACK)	0, unable, no sitting balance 5, major help (one or two people, physical), can sit 10, minor help (verbal or physical) 15, independent	
Barthel-9	Case Evaluation – Barthel autotest	The Barthel ADL Index	Checkbox	MOBILITY (ON LEVEL SURFACES)	0, immobile or < 50 yards 5, wheelchair independent, including corners, > 50 yards 10, walks with help of one person (verbal or physical) > 50 yards 15, independent (but may use any aid; for example, stick) > 50 yards	
Barthel-10	Case Evaluation – Barthel autotest	The Barthel ADL Index	Checkbox	STAIRS	0, unable 5, needs help (verbal, physical, carrying aid) 10, independent	



Barthel-11	Case Evaluation – Barthel autotest	–	The Barthel ADL Index	calc	Barthel Index	Sum(Barthel-1,Barthel-2,Barthel-3,Barthel-4,Barthel-5,Barthel-6,Barthel-7,Barthel-8,Barthel-9,Barthel-10)
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3.2.8 The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Womac1	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Pain - Walking	0 1 2 3 4
Womac2	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Pain - Stair Climbing	0 1 2 3 4
Womac3	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Pain - Nocturnal	0 1 2 3 4
Womac4	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Pain - Rest	0 1 2 3 4
Womac5	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Pain - Weight bearing	0 1 2 3 4
Womac6	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Stiffness - Morning stiffnes	0 1 2 3 4
Womac7	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Stiffness - Stiffn ess occurring later in the day	0 1 2 3 4
Womac8	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Descending stairs	0 1 2 3 4



Womac9	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Ascending stairs	0 1 2 3 4
Womac10	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Rising from sitting	0 1 2 3 4
Womac11	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Standing	0 1 2 3 4
Womac12	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Bending to floor	0 1 2 3 4
Womac13	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Walking on flat surface	0 1 2 3 4
Womac14	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Getting in/ out of car	0 1 2 3 4
Womac15	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Going shopping	0 1 2 3 4
Womac16	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Putting on socks	0 1 2 3 4
Womac17	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Lying in bed	0 1 2 3 4
Womac18	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Taking off socks	0 1 2 3 4
Womac19	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Rising from bed	0 1 2 3 4

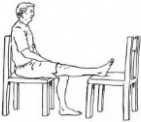




Womac20	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Getting in/out of bath	0 1 2 3 4
Womac21	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Sitting	0 1 2 3 4
Womac22	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Getting on/off toilet	0 1 2 3 4
Womac23	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Heavy domestic duties	0 1 2 3 4
Womac24	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	radio	Physical Function - Light domestic duties	0 1 2 3 4
Womac25	Case evaluation – WOMAC	The Western Ontario and McMaster Universities Osteoarthritis Index	calc	WOMAC Index	sum(womac1, womac2, womac3, womac4, womac5, womac6, womac7, womac8, womac9, womac10, womac11, womac12, womac13, womac14, womac15, womac16, womac17, womac18, womac19, womac20, womac21, womac22, womac23, womac24)

3.2.9 Self-care auto-test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
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scat1	Case evaluation – Self-care auto-test	Self-care auto-test	checkbox	Quants cops he de realitzar els exercicis de rehabilitació?	0, Un cop al dia 1, No s’han de fer 2, 4 cops al dia
Scat2	Case evaluation – Self-care auto-test	Self-care auto-test	checkbox	Que he de fer si s’inflama la cama?	0,  1,  2, 
Scat3	Case evaluation – Self-care auto-test	Self-care auto-test	checkbox	Quan s’ha de curar la ferida?	1, Cada dia 2, En cas de sagnat o deteriorament de l’apòsit aniré al meu CAP de referència 3, Mai
Scat4	Case evaluation – Self-care auto-test	Self-care auto-test	checkbox	Que és millor per a la meva recuperació?	0, Fer repòs al llit 1, Circuit durant el dia 2, Caminar, repòs cadira o llit, exercicis 3, Estar tot el dia de peu
Scat5	Case evaluation – Self-care auto-test	Self-care auto-test	checkbox	Com controlo el dolor?	0, Prenent doble dosi de calmant 1, Seguir la pauta mèdica d’analgèsia i aplicant gel en el cas de pròtesi de genoll 2, Aguantar el dolor
Scat6	Case evaluation – Self-care auto-test	Self-care auto-test	checkbox	I si tinc molt dolor tot i prendre	0, Aguantar el dolor



				correctament la pauta d'analgèsia?	1, Prenent doble dosi de calmant 2, Ho comunicaré al meu metge de capçalera
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3.3 Work-plan Definition

3.3.1 Definition of interventions during the hospitalization

3.3.1.1 Physical Activity Prescription

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Dh_physicalP1	Work-plan Definition – Physical Prescription	Physical Prescription	Date	Start date	
Dh_physicalP2	Work-plan Definition – Physical Prescription	Physical Prescription	Date	End date	
Dh_physicalP3	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Number of steps daily	
Dh_physicalP4	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Intensity of the activity: Minutes of medium level activity daily.	
Dh_physicalP5	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Intensity of the activity: Minutes of high level activity daily.	
Dh_physicalP6	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Max. minutes without activity allowed daily.	



3.3.1 Definition of interventions post-hospitalization

3.3.1.1 Physical Activity Prescription

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ah_physicalP1	Work-plan Definition – Physical Prescription	Physical Prescription	Date	Start date	
ah_physicalP2	Work-plan Definition – Physical Prescription	Physical Prescription	Date	End date	
ah_physicalP3	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Number of steps daily	
ah_physicalP4	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Intensity of the activity: Minutes of medium level activity daily.	
ah_physicalP5	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Intensity of the activity: Minutes of high level activity daily.	
ah_physicalP6	Work-plan Definition – Physical Prescription	Physical Prescription	Text	Max. minutes without activity allowed daily.	

3.3.1.2 Autocheck Health Status Prescription

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ah_autocheckP1	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	Date	Start date	
ah_autocheckP2	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	Date	End date	
ah_autocheckP3	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	Dropdown	Units of frequency	0, hours 1, days 2, weeks 3, months



ah_autocheckP4	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	Text	Frequency	
ah_autocheckP5	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	radio	EPOC Questionnaire	0 No 1 Yes
ah_autocheckP6	Work-plan Definition – Autocheck Health Status Prescription	Autocheck Health Status Prescription	radio	Cardiac Insufficiency Questionnaire	0 No 1 Yes

3.3.1.3 Rehabilitation Prescription

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ah_rehabPresc1	Work-plan Definition – Rehabilitation	Rehabilitation	Date	Start date	
ah_rehabPresc2	Work-plan Definition – Rehabilitation	Rehabilitation	Date	End date	
ah_rehabPresc3	Work-plan Definition – Rehabilitation	Rehabilitation	Text	Frequency	

3.3.1.4 Prescription Vital Signs Monitoring

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ah_vsm1	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	Date	Start date	
ah_vsm2	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	Date	End date	
ah_vsm3	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	dropdown	Vital Sign	0, Weight 1, Oxygen Saturation 2, Hearth rate



ah_vsm4	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	Dropdown	Units of frequency	0, hours 1, days 2, weeks 3, months
ah_vsm5	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	Text	Frequency	
ah_Vsm6	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	Text	Min. Threshold	
ah_Vsm7	Work-plan Definition – Vital Signs Monitoring	Vital Signs Monitoring	text	Max. Threshold	

3.3.1.5 Social Interventions

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ah_Social1	Work-plan Definition – Social intervention	Social Intervention	radio	Provide caregiver for a given amount of hours	0 No 1 Yes
ah_Social2	Work-plan Definition – Social intervention	Social Intervention	radio	Provide tele-assistance	0 No 1 Yes
ah_Social3	Work-plan Definition – Social intervention	Social Intervention	radio	Home visits by the nurse	0 No 1 Yes
ah_Social4	Work-plan Definition – Social intervention	Social Intervention	radio	Home visits by the doctor	0 No 1 Yes
ah_social5	Work-plan Definition – Social intervention	Social Intervention	radio	Provide access to medical box with the week medication	0 No 1 Yes

3.3.1.6 Work Plan Definition Agreement

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ah_agreement1	Work-plan Definition – Agreement	Agreement	radio	Validation of the physical activity prescription	0 No 1 Yes
ah_Agreement2	Work-plan Definition – Agreement	Agreement	radio	Validation of the nutrition prescription	0 No 1 Yes



ah_Agreement3	Work-plan Definition – Agreement	Agreement	radio	Validation of the auto-check prescription	0 No 1 Yes
ah_Agreement4	Work-plan Definition – Agreement	Agreement	radio	Validation of the rehabilitation prescription	0 No 1 Yes
ah_Agreement5	Work-plan Definition – Agreement	Agreement	radio	Validation of the education material proposed	0 No 1 Yes
ah_Agreement6	Work-plan Definition – Agreement	Agreement	radio	Validation of the prescription of the vital sings monitoring	0 No 1 Yes
ah_Agreement7	Work-plan Definition – Agreement	Agreement	radio	Validation of the social interventions	0 No 1 Yes

3.4 Work-plan Execution

3.4.1 Intervention execution pre-hospitalization

3.4.1.1 Preoperative anemia assessment and management

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
bh_bhanemiaExec1	Work-plan Execution – anaemia assessment and management	anaemia assessment and management	Number	Value of ferritina and Hb.	
bh_bhanemiaExec2	Work-plan Execution – anaemia assessment and management	anaemia assessment and management	number	The patient is part of the saving sang program: yes/no.	
bh_bhanemiaExec3	Work-plan Execution – anaemia assessment and management	anaemia assessment and management	boolean	Treatment with intravenous iron	Yes No



bh_bhanemiaExec4	Work-plan Execution – anaemia assessment and management	Iron Prescription	Date	Start date	
bh_bhanemiaExec5	Work-plan Execution – anaemia assessment and management	Iron Prescription	Date	End date	
bh_bhanemiaExec6	Work-plan Execution – anaemia assessment and management	Iron Prescription	Boolean	In blood treatment?	0, No 1, Yes
bh_bhanemiaExec7	Work-plan Execution – anaemia assessment and management	Iron Prescription	number	Num of pills	
bh_bhanemiaExec8	Work-plan Execution – anaemia assessment and management	Iron Prescription	Dropdown	Units of frequency	0, hours 1, days 2, weeks 3, months
bh_bhanemiaExec9	Work-plan Execution – anaemia assessment and management	Iron Prescription	Dropdown	Part of the day	0, Morning 1, Noon 2, Afternoon 3, Evening 4 Night

3.4.1.2 High Blood Pressure Control

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Bh_bloodPControl1	Work-plan Execution – Blood Pressure Control	Blood Pressure Control	radio	Blood Pressure Control Inside the correct values	0, No 1, Yes

3.4.1.3 Diabetes Control

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Bh_DiabetisControl1	Work-plan Execution – Diabetes Control	Diabetes Control	radio	Diabetes Inside the correct values	0, No 1, Yes



3.4.1.4 Verbal Numerical Rating Scale before hospitalization (Paint Test)

Reporting process and protocol to be defined by the SACM & SMS responsible.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Bh_BHVNRExec1	Work-plan Execution – VNRS before hospitalization	VNRS	radio	VNRS	0 1 2 3 4 5 6 7 8 9 10

3.4.1.5 S-LANSS before hospitalization (Paint Test)

Reporting process and protocol to be defined by the SACM & SMS responsible.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Bh_slanssExec1	Work-plan Execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	1.In the area where you have pain, do you also have “pins and needles”, tingling or pricking sensations?	0, NO – I don’t get these sensations 5, YES – I get these sensations
Bh_slanssExec2	Work-plan Execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	2. Does the painful area change colour (perhaps look mottled or more red) when the pain is particularly bad?	0, NO – The pain does not affect the colour of my skin 5, YES – I have noticed that the pain does make my skin look different from normal.
Bh_slanssExec3	Work-plan Execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	3.Does your pain make the affected skin abnormally sensitive to touch? Getting unpleasant sensations or pain when lightly stroking	0, NO – The pain does not make my skin abnormally sensitive to touch. 3, YES – My skin in that area is particularly sensitive to touch.



				the skin might describe this.	
Bh_slanssExec4	Work-plan Execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	4. Does your pain come on suddenly and in bursts for no apparent reason when you are completely still? Words like “electric shocks”, jumping and bursting might describe this.	0, NO – My pain doesn’t really feel like this. 2, YES – I get these sensations often.
Bh_slanssExec5	Work-plan Execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	5. In the area where you have pain, does your skin feel unusually hot like a burning pain?	0, NO – I don’t have burning pain 1, YES – I get burning pain often
Bh_slanssExec6	Work-plan Execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	6. Gently rub the painful area with your index finger and then rub a non-painful area (for example, an area of skin further away or on the opposite side from the painful area). How does this rubbing feel in the painful area?	0, The painful area feels no different from the non-painful area 5, I feel discomfort, like pins and needles, tingling or burning in the painful area that is different from the non-painful area.
Bh_slanssExec7	Work-plan Execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	7. Gently press on the painful area with your finger tip and then gently press in the same way onto a non-painful area (the same non-painful area that you chose in the last question). How does this feel in the painful area?	0, The painful area does not feel different from the non-painful area. 3, I feel numbness or tenderness in the painful area that is different from the non-painful area.



Bh_slanssExec8	Work-plan Execution – S-LANSS after hospitalization	S-LANSS after hospitalization	calc	Score	Sum (Ahslanss1, Ahslanss2, Ahslanss3, Ahslanss4, Ahslanss5, Ahslanss6, Ahslanss7)
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3.4.2 Intervention execution during the hospitalization

3.4.2.1 Nutritional Education

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Dh_neducaExec1	Work-plan Execution – nutrition education	Nutrition Education	Radio	Has patient's nutritional formation done during the hospitalization?	0, No 1, Yes
Dh_neducaExec2	Work-plan Execution – nutrition education	Nutrition Education	Radio	Has the caregiver's nutritional formation done during the hospitalization?	0, No 1, Yes

3.4.2.1 Physical Activity Monitoring

The data will be obtained directly from the fitness trackers. The patient will be alert with the prescription and proper alerts but no form will be showed to be fulfilled.

Reporting process and protocol to be defined by the SACM & SMS responsible.

3.4.2.2 Verbal Numerical Rating Scale during hospitalization (Paint Test)

Reporting process and protocol to be defined by the SACM & SMS responsible.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Dh_DHVNRExec1	Case execution – VNRS during hospitalization	VNRS	radio	VNRS	0 1 2 3 4 5 6 7 8 9 10



3.4.2.3 S-LANSS during hospitalization (Paint Test)

Reporting process and protocol to be defined by the SACM & SMS responsible.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Dh_slanssExec1	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	1.In the area where you have pain, do you also have “pins and needles”, tingling or prickling sensations?	0, NO – I don’t get these sensations 5, YES – I get these sensations
Dh_slanssExec2	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	2. Does the painful area change colour (perhaps look mottled or more red) when the pain is particularly bad?	0, NO – The pain does not affect the colour of my skin 5, YES – I have noticed that the pain does make my skin look different from normal.
Dh_slanssExec3	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	3.Does your pain make the affected skin abnormally sensitive to touch? Getting unpleasant sensations or pain when lightly stroking the skin might describe this.	0, NO – The pain does not make my skin abnormally sensitive to touch. 3, YES – My skin in that area is particularly sensitive to touch.
Dh_slanssExec4	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	4. Does your pain come on suddenly and in bursts for no apparent reason when you are completely still? Words like “electric shocks”, jumping and bursting might describe this.	0, NO – My pain doesn’t really feel like this. 2, YES – I get these sensations often.



Dh_slanssExec5	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	5. In the area where you have pain, does your skin feel unusually hot like a burning pain?	0, NO – I don't have burning pain 1, YES – I get burning pain often
Dh_slanssExec6	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	6. Gently rub the painful area with your index finger and then rub a non-painful area (for example, an area of skin further away or on the opposite side from the painful area). How does this rubbing feel in the painful area?	0, The painful area feels no different from the non-painful area 5, I feel discomfort, like pins and needles, tingling or burning in the painful area that is different from the non-painful area.
Dh_slanssExec7	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	7. Gently press on the painful area with your finger tip and then gently press in the same way onto a non-painful area (the same non-painful area that you chose in the last question). How does this feel in the painful area?	0, The painful area does not feel different from the non-painful area. 3, I feel numbness or tenderness in the painful area that is different from the non-painful area.
Dh_slanssExec8	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	calc	Score	Sum (Ahslanss1, Ahslanss2, Ahslanss3, Ahslanss4, Ahslanss5, Ahslanss6, Ahslanss7)

3.4.3 Intervention execution post-hospitalization

3.4.3.1 Nutritional Education

The data will be sent by the professional using SACM and will be received by the patient using the SMS.

The information needed to do the communication and the protocol to be defined by the SACM & SMS responsible.



3.4.3.2 Physical Activity Monitoring

The data will be obtained directly from the fitness trackers. The patient will be alert with the prescription and proper alerts but no form will be showed to be fulfilled.

Reporting process and protocol to be defined by the SACM & SMS responsible.

3.4.3.3 Vital Signs Monitoring

The data will be obtained directly from the smart devices. The patient will be alert to use the proper device corresponding with the prescription but no form will be showed to be fulfilled.

Reporting process and protocol to be defined by the SACM & SMS responsible.

3.4.3.4 Rehabilitation

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Ah_rehabExe c1	Case execution – rehabilitation	Rehabilitation	radio	Has the patient done the rehabilitation exercices?	0 No 1 Yes

3.4.3.5 Verbal Numerical Rating Scale after hospitalization (Paint Test)

Reporting process and protocol to be defined by the SACM & SMS responsible.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
AH_VNRSExec1	Case execution – VNRS after hospitalization	VNRS	radio	VNRS	0 1 2 3 4 5 6 7 8 9 10

3.4.3.6 S-LANSS after hospitalization (Paint Test)

Reporting process and protocol to be defined by the SACM & SMS responsible.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Ah_slanssExec1	Case execution – S- LANSS after hospitalization	S-LANSS after hospitalization	radio	1.In the area where you have pain, do you also have “pins and needles”, tingling or prickling sensations?	0, NO – I don’t get these sensations 5, YES – I get these sensations



Ah_slanssExec2	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	2. Does the painful area change colour (perhaps look mottled or more red) when the pain is particularly bad?	0, NO – The pain does not affect the colour of my skin 5, YES – I have noticed that the pain does make my skin look different from normal.
Ah_slanssExec3	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	3. Does your pain make the affected skin abnormally sensitive to touch? Getting unpleasant sensations or pain when lightly stroking the skin might describe this.	0, NO – The pain does not make my skin abnormally sensitive to touch. 3, YES – My skin in that area is particularly sensitive to touch.
Ah_slanssExec4	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	4. Does your pain come on suddenly and in bursts for no apparent reason when you are completely still? Words like “electric shocks”, jumping and bursting might describe this.	0, NO – My pain doesn’t really feel like this. 2, YES – I get these sensations often.
Ah_slanssExec5	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	5. In the area where you have pain, does your skin feel unusually hot like a burning pain?	0, NO – I don’t have burning pain 1, YES – I get burning pain often
Ah_slanssExec6	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	6. Gently rub the painful area with your index finger and then rub a non-painful area (for example, an area of skin further away or on the opposite side from the painful area). How does this rubbing feel in the painful area?	0, The painful area feels no different from the non-painful area 5, I feel discomfort, like pins and needles, tingling or burning in the painful area that is different from the non-painful area.



Ah_slanssExec7	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	radio	7. Gently press on the painful area with your finger tip and then gently press in the same way onto a non-painful area (the same non-painful area that you chose in the last question). How does this feel in the painful area?	0, The painful area does not feel different from the non-painful area. 3, I feel numbness or tenderness in the painful area that is different from the non-painful area.
Ah_slanssExec8	Case execution – S-LANSS after hospitalization	S-LANSS after hospitalization	calc	Score	Sum (Ahslanss1, Ahslanss2, Ahslanss3, Ahslanss4, Ahslanss5, Ahslanss6, Ahslanss7)

3.4.3.7 Answer Autocheck Health Status

Reporting process and protocol to be defined by the SACM & SMS responsible.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Ph_autocheck1	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Breathing	1, I breathe worse than usual* 0, No changes in breathing pattern
Ph_autocheck2	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Vomit	1, I vomited 0, I have not vomited
Ph_autocheck3	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Dizziness	1, I feel dizzy often* 0, I do not get dizzy
Ph_autocheck4	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Eating	1, I eat less than usual* 0, No changes in eating pattern



Ph_autocheck5	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Drinking	1, I drink less than usual 0, No changes in drinking pattern
Ph_autocheck6	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Urinating	1, I urinate less than usual 0, No changes in urinating pattern
Ph_autocheck7	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Defecating	1, I cannot defecate* 0, No changes in defecating pattern
Ph_autocheck8	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Moving	1, I move less than usual 0, No changes in moving pattern
Ph_autocheck9	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Temperature	1, I have fever (>37º)* 0, I don't have fever
Ph_autocheck10	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Resting and sleeping	1, I have more troubles resting / sleeping 0, No changes in my resting / sleeping pattern
Ph_autocheck11	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Body cleansing	1, I need help 0, I do it on my own
Ph_autocheck12	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Dressing	1, I need help 0, I do it on my own

3.4.3.8 Patient Education and Training to the Caregiver

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
educaExec1	Work-plan Execution – education	Education	Radio	Has patient's formation done	0, No 1, Yes



						during the hospitalization?	
educaExec2	Work-plan education	Execution	–	Education	radio	Has patient's formation done after the hospitalization?	0, No 1, Yes
educaExec3	Work-plan education	Execution	–	Education	Radio	Has the caregiver's formation done during the hospitalization?	0, No 1, Yes
educaExec4	Work-plan education	Execution	–	Education	radio	Has the caregiver's formation done during the hospitalization?	0, No 1, Yes

3.5 Discharge

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
discharge1	Discharge – Patient	Patient's Discharge Notification	Radio	Notify the discharge to the patient?	0, No 1, Yes
discharge2	Discharge - Professional	Patient's Discharge	radio	Discharge the patient?	0, No 1, Yes



4. Annexes

4.1 Distance between knee – ankle

Para estimar la talla con la medida de la altura rodilla, existen dos posibilidades:

1. Usar la siguiente tabla para convertir la altura de la rodilla (cm) en altura (m)
2. Aplicar la fórmula que aparece a continuación de la tabla. (TAR 2)

Talla estimada a partir de la longitud de la rodilla

T a l l a (m)	Hombre (18-59 años)	1,94	1,93	1,92	1,91	1,90	1,89	1,88	1,87	1,865	1,86	1,85	1,84	1,83	1,82	1,81
	Hombre (60-90 años)	1,94	1,93	1,92	1,91	1,90	1,89	1,88	1,87	1,86	1,85	1,84	1,83	1,82	1,81	1,80
	Longitud rodilla (cm)	65,0	64,5	64,0	63,5	63,0	62,5	62,0	61,5	61,0	60,5	60,0	59,5	59,0	58,5	58,0
T a l l a (m)	Mujer (18-59 años)	1,89	1,88	1,875	1,87	1,86	1,85	1,84	1,83	1,82	1,81	1,80	1,79	1,78	1,77	1,76
	Mujer (60-90 años)	1,86	1,85	1,84	1,835	1,83	1,82	1,81	1,80	1,79	1,78	1,77	1,76	1,75	1,74	1,73
	Longitud rodilla (cm)	65,0	64,5	64,0	63,5	63,0	62,5	62,0	61,5	61,0	60,5	60,0	59,5	59,0	58,5	58,0
T a l l a (m)	Hombre (18-59 años)	1,80	1,79	1,78	1,77	1,76	1,75	1,74	1,73	1,72	1,71	1,705	1,70	1,69	1,68	1,67
	Hombre (60-90 años)	1,79	1,78	1,77	1,76	1,74	1,73	1,72	1,71	1,70	1,69	1,68	1,67	1,66	1,65	1,64
	Longitud rodilla (cm)	57,5	57,0	56,5	56,0	55,5	55,0	54,5	54,0	53,5	53,0	52,5	52,0	51,5	51,0	50,5
T a l l a (m)	Mujer (18-59 años)	1,75	1,74	1,735	1,73	1,72	1,71	1,70	1,69	1,68	1,67	1,66	1,65	1,64	1,63	1,62
	Mujer (60-90 años)	1,72	1,71	1,70	1,69	1,68	1,67	1,66	1,65	1,64	1,63	1,625	1,62	1,61	1,60	1,59
	Longitud rodilla (cm)	57,5	57,0	56,5	56,0	55,5	55,0	54,5	54,0	53,5	53,0	52,5	52,0	51,5	51,0	50,5
T a l l a (m)	Hombre (18-59 años)	1,66	1,65	1,64	1,63	1,62	1,61	1,60	1,59	1,58	1,57	1,56	1,555	1,55	1,54	1,53
	Hombre (60-90 años)	1,63	1,62	1,61	1,60	1,59	1,58	1,57	1,56	1,55	1,54	1,53	1,52	1,51	1,49	1,48
	Longitud rodilla (cm)	50,0	49,5	49,0	48,5	48,0	47,5	47,0	46,5	46,0	45,5	45,0	44,5	44,0	43,5	43,0
T a l l a (m)	Mujer (18-59 años)	1,61	1,60	1,59	1,585	1,58	1,57	1,56	1,55	1,54	1,53	1,52	1,51	1,50	1,49	1,48
	Mujer (60-90 años)	1,58	1,57	1,56	1,555	1,54	1,53	1,52	1,51	1,50	1,49	1,48	1,47	1,46	1,45	1,44
	Longitud rodilla (cm)	50,0	49,5	49,0	48,5	48,0	47,5	47,0	46,5	46,0	45,5	45,0	44,5	44,0	43,5	43,0

TAR2 =

Woman 19 - 59 years old: $(AR \times 1.86) - (A \times 0.05) + 70.25$

Woman 60 - 80 years old: $(AR \times 1.91) - (A \times 0.17) + 75$

Man 19 - 59 years old: $(AR \times 1.88) + 71.85$

Man 60 – 80 years old: $(AR \times 2.08) + 59.01$

AR = Knee height

A = Age



4.2 Self-care auto-test (Catalan)

- **Quants cops he de realitzar els exercicis de rehabilitació?**

- Un cop al dia
- No s'han de fer
- 4 cops al dia

- **Que he de fer si s'inflama la cama?**



- **Quan s'ha de curar la ferida?**

- Cada dia
- En cas de sagnat o deteriorament de l'apòsit aniré al meu CAP de referència
- Mai

- **Que és millor per a la meva recuperació?**

- Fer repòs al llit
- Circuit durant el dia → Caminar, repòs cadira o llit, exercicis
- Estar tot el dia de peu

- **Com controlo el dolor?**

- Prenent doble dosi de calmant
- Seguir la pauta mèdica d'analgèsia i aplicant gel en el cas de pròtesi de genoll
- Aguantar el dolor

- **I si tinc molt dolor tot i prendre correctament la pauta d'analgèsia?**

- Aguantar el dolor
- Prenent doble dosi de calmant
- Ho comunicaré al meu metge de capçalera



4.3 Autocheck Health Status (Catalan)

Respirar	<input type="checkbox"/> Respiro pitjor*	<input type="checkbox"/> Respiro igual
Vòmit	<input type="checkbox"/> He vomitat*	<input type="checkbox"/> No he vomitat
Mareig	<input type="checkbox"/> Em marejo sovint*	<input type="checkbox"/> No em marejo
Menjar	<input type="checkbox"/> Menjo menys*	<input type="checkbox"/> Menjo igual
Beure	<input type="checkbox"/> Bec menys	<input type="checkbox"/> Bec igual
Orinar	<input type="checkbox"/> Orino menys*	<input type="checkbox"/> Orino igual
Defecar	<input type="checkbox"/> No defeco*	<input type="checkbox"/> Defeco igual
Moure's	<input type="checkbox"/> Em moc menys	<input type="checkbox"/> Em moc igual
Temperatura	<input type="checkbox"/> Tinc febre(>37°)*	<input type="checkbox"/> No tinc febre
Dolor	<input type="checkbox"/> Tinc més dolor*	<input type="checkbox"/> Dolor controlat
Repòs i son	<input type="checkbox"/> Em costa més	<input type="checkbox"/> Dormo igual
Neteja corporal	<input type="checkbox"/> Amb ajuda	<input type="checkbox"/> Em netejo sol
Vestir-se	<input type="checkbox"/> Amb ajuda	<input type="checkbox"/> Em vesteixo sol



6.2.3 Groningen (The Netherlands)



CONNECARE

Case Study 1 - Definition

Groningen – Asthma and COPD Telehealth Service UMCG

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
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Deliverable	Number		Title	
Work Package	Number		Title	

Date of delivery	Contractual		Actual	
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Dissemination Level	Public <input type="checkbox"/> Consortium <input type="checkbox"/>			

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Abstract	
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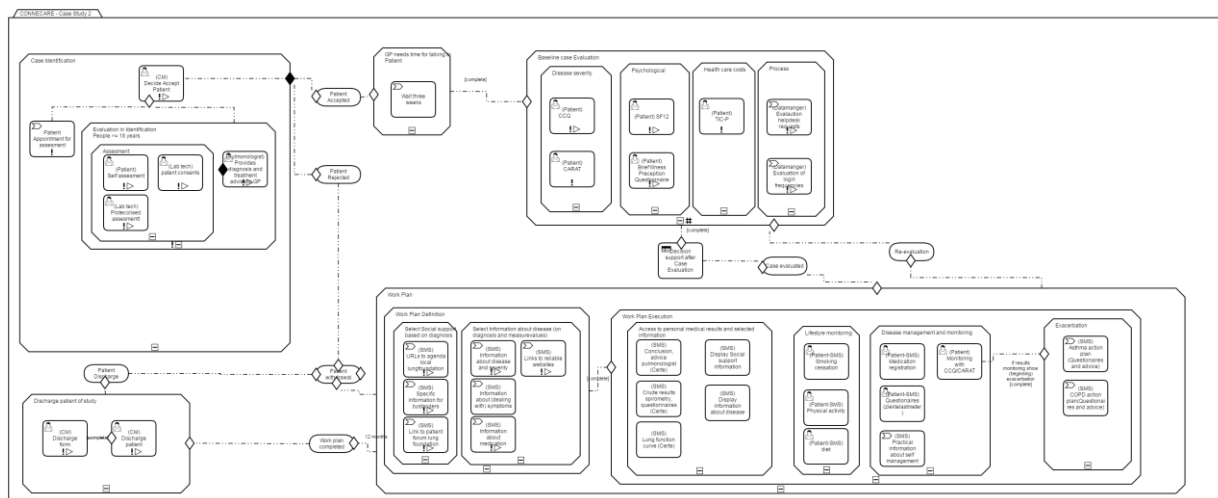


Executive Summary

This document summarizes the detailed flow of actions for Case 1 from patient identification through discharge from the study. The document also details all of the data to be collected and entered into the SACM for purposes of instructing the SMS as well as the documentation that will be needed for evaluation.



1. Case Study Diagram

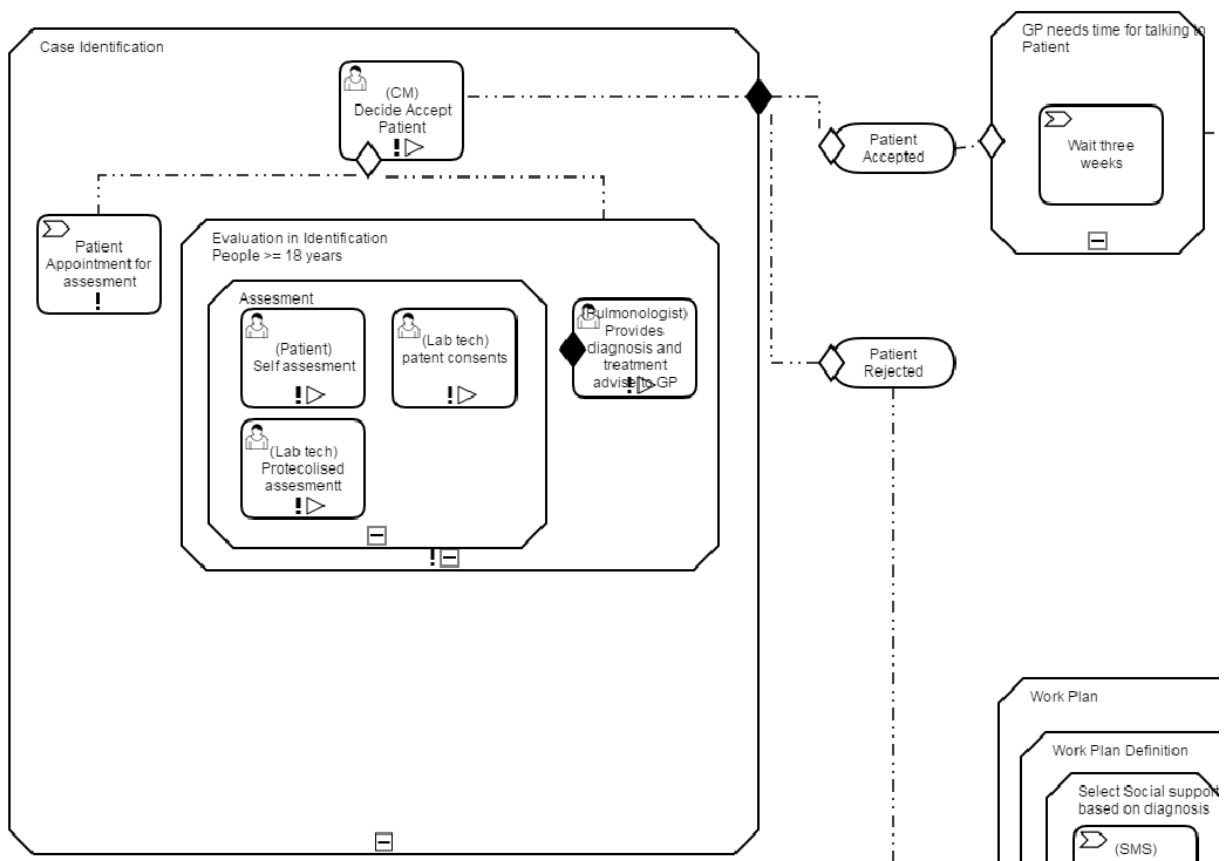




2. Forms Description by steps

This section presents all the forms used during the process of the Asthma and COPD Telehealth service CS1 in Groningen. Some of these forms will be performed by the SACM, some by the SMS and some by other systems external to CONNECARE.

2.1 Case Identification Criteria



2.1.1 Basic criteria

Name
Basic criteria
The text of the questionnaire
No formal questionnaire – yes/no answers to the following criteria
Description
1. Age >= 18 2. Patient appointed for assessment 3. Patient should own a tablet or smart phone 4. Comprehension of the Dutch language (reading and writing) 5. Willing to sign informed consent and answered the questionnaire's that are provided
Responsible
Asthma and COPD Telehealth service Case Manager (CM)
CONNECARE Subsystem



The CM should enter the results (yes/no) in to the SACM

Comments

This will be done in Dutch, translation is needed. We will enter to the SACM data only for patients that are suitable according to inclusion criteria and gave their consent.



2.1.2 Lung function assessment

Name
Spirometry
The text of the questionnaire (NL)
No formal questionnaire – a report of the test is made.
Description
Flow volume investigation including reversibility
Responsible
Lab technician
CONNECARE Subsystem
The CM should enter all relevant data into the SACM.
Comments
This will be done in Dutch, translation is needed.

2.1.3 Asthma control

Name
CARAT
The text of the questionnaire (NL and ENG)
Attached at the end of this document.
Description
is a brief self-administered questionnaire to quantify the degree of control of Allergic Rhinitis and Asthma
Responsible
Lab technician
CONNECARE Subsystem
The CM should enter the results into the SACM.
Comments
The SACM will calculate the score on the questionnaire.

2.1.4 COPD health status

Name
CCQ
The text of the questionnaire (NL and ENG)
Attached at the end of this document.
Description
Assessment of the COPD health status
Responsible
Lab technician
CONNECARE Subsystem
The CM should enter the results into the SACM.
Comments
The SACM will calculate the score on the questionnaire.

2.1.5 Anamnesis

Name
Patient anamnesis



The text of the questionnaire (NL)
No formal questionnaire – a report of the anamnesis is made.
Description
1. History 2. BMI 3. Smoking
Responsible
Lab technician
Comments
This will be done in Dutch, translation is needed. The CM should enter the result (yes/ no) in to the SACM.

2.1.6. Review medication and inhaler technique

Name
Review medication and inhaler technique
The text of the questionnaire (NL)
No formal questionnaire – a report of current medications and the inhaler technique is made.
Description
Control of current medications and inhaler technique
Responsible
Lab technician
Comments
This will be done in Dutch, translation is needed. The CM will enter the report into the SACM.

2.1.7. Evaluation of results by pulmonologists

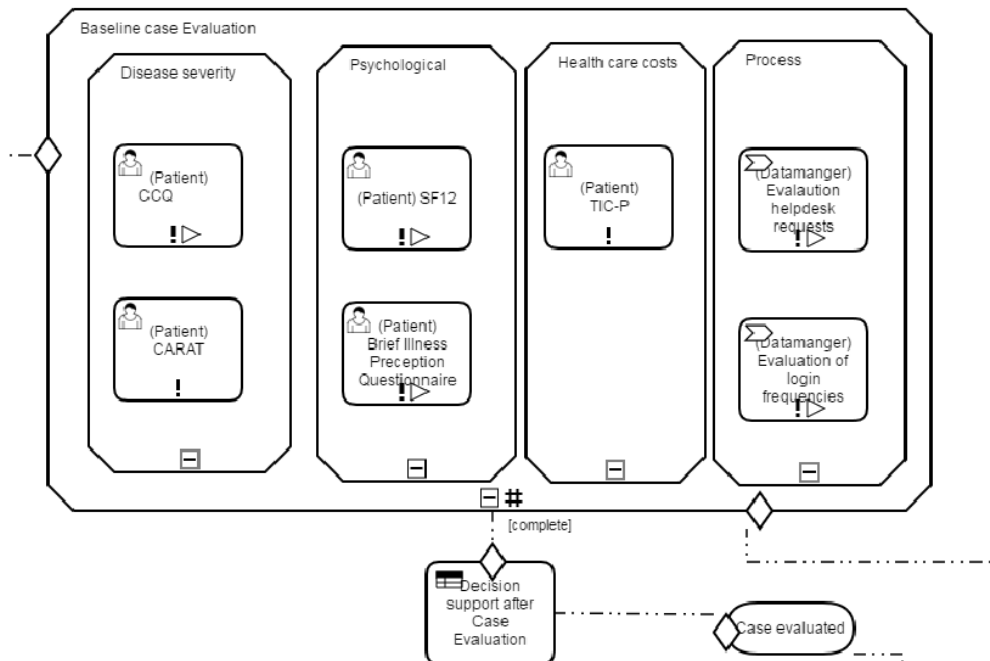
Name
Evaluation of results
The text of the questionnaire (NL)
No formal questionnaire – a treatment advice is generated.
Description
1. Evaluation and conclusion of lung function and health status 2. Generation of a working diagnosis 3. Generation of treatment advice
Responsible
Local pulmonologists
Comments
This will be done in Dutch, translation is needed. The CM will enter the report into the SACM.



2.1.8. Patient consent

Name
Patient Consent
The text of the questionnaire (NL)
No formal questionnaire – yes/no answer
Description
Consent form approved by the ethics committee, to be signed by the patient on hard copy.
Responsible
Lab technician
Comments
The CM should enter the result (yes/ no) in to the SACM.

2.2 Case Evaluation





2.2.1 Asthma control

Name
CARAT
The text of the questionnaire (NL and ENG)
Attached at the end of this document.
Description
is a brief self-administered questionnaire to quantify the degree of control of Allergic Rhinitis and Asthma
Responsible
Lab technician
CONNECARE Subsystem
The CM will enter the results into the SACM
Comments
The SACM will calculate the score on the questionnaire.

2.2.2. COPD health status

Name
CCQ
The text of the questionnaire (NL and ENG)
Attached at the end of this document.
Description
Assessment of the COPD health status
Responsible
Lab technician
CONNECARE Subsystem
The CM will enter the results into the SACM
Comments
The SACM will calculate the score on the questionnaire.

2.2.3. SF-12

Name
SF-12
The text of the questionnaire (NL and ENG)
Attached at the end of this document.
Description
Measure functional health and well-being from the patient's point of view
Responsible
Asthma and COPD Telehealth service CM
CONNECARE Subsystem
The CM will enter the results into the SACM
Comments
The SACM will calculate the score on the questionnaire.



2.2.4. Illness perception questionnaire

Name
Illness perception questionnaire
The text of the questionnaire (NL/ENG)
Attached in the end of this document.
Description
Assessment of the cognitive and emotional representations of illness.
Responsible
Asthma and COPD Telehealth service CM
CONNECARE Subsystem
SACM
Comments
The CM will enter the results into the SACM. The SACM will calculate the score on the questionnaire.

2.2.5. TiC-P

Name
TiC-P
The text of the questionnaire - URL (NL/ ENG)
Attached in the end of this document.
Description
Measurement of medical costs and productivity losses in adults.
Responsible
Asthma and COPD Telehealth service CM
CONNECARE Subsystem
SACM
Comments
The CM will enter the results into the SACM. The SACM will calculate the result.

2.2.6. Evaluation helpdesk requests

Name
Evaluation helpdesk requests
The text of the questionnaire (NL)
No formal questionnaire – a report of the responses is made.
Responsible
Data manager
CONNECARE Subsystem
SMS
Comments
To be filled by the patient during ongoing-evaluation in the SMS. This will be done in Dutch, translation is needed.

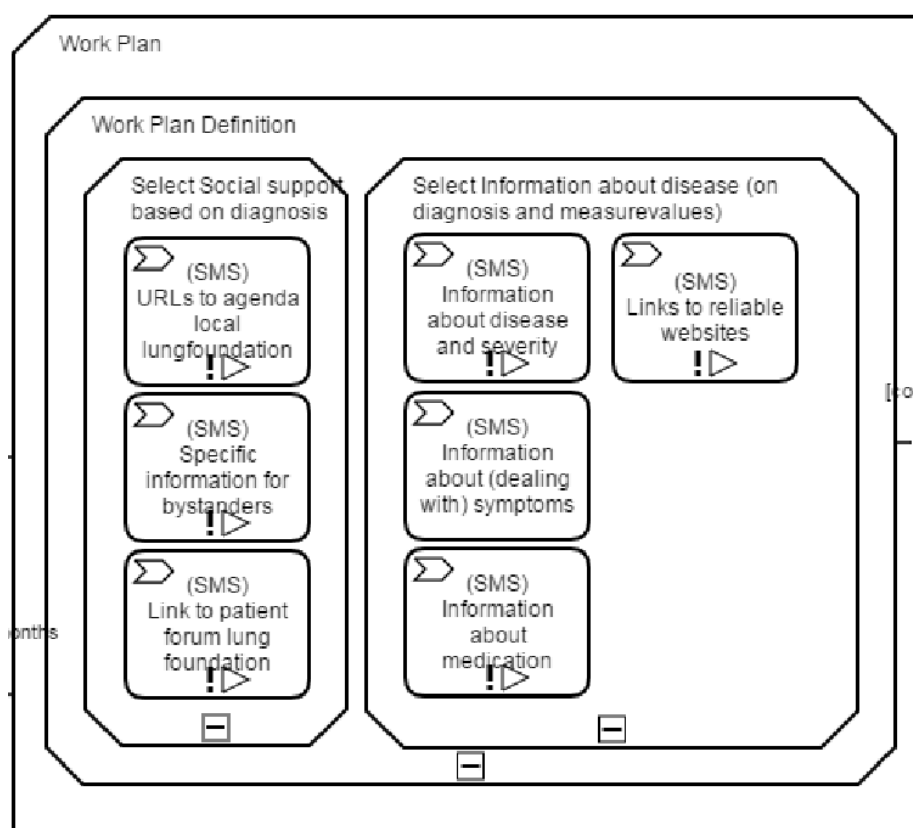
2.2.7. Evaluation of login frequencies

Name
Evaluation of login frequencies



The text of the questionnaire (NL)
No formal questionnaire – a report of the responses is made.
Responsible
Data manager
CONNECARE Subsystem
SMS
Comments
To be filled by the patient during ongoing-evaluation in the SMS. This will be done in Dutch, translation is needed.

2.3. Work-plan Definition



2.3.1. Social support

Name
Social support plan
Description
-URLs to agenda local lung foundation -Specific information for bystanders -Link to patient forum lung foundation
Responsible
Asthma and COPD telehealth service CM
CONNECARE Subsystem
SMS



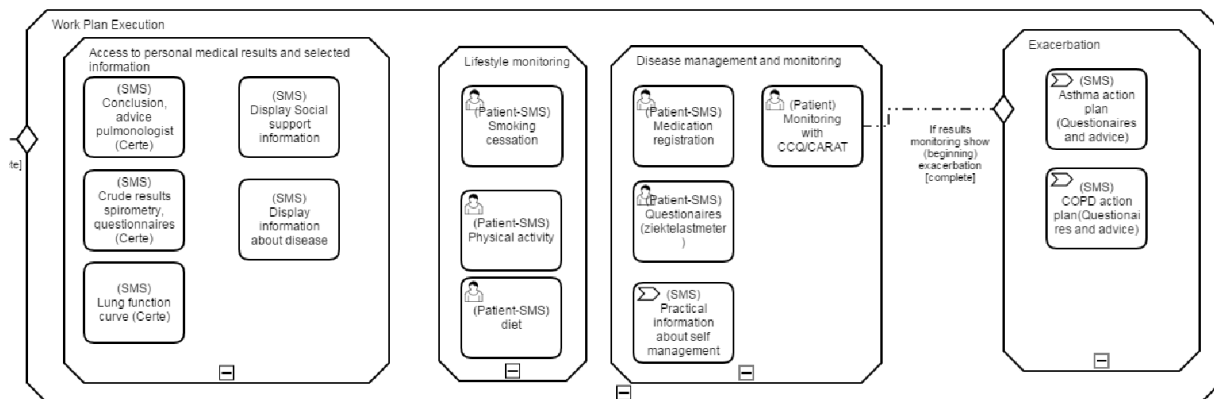
Comments

All information is in Dutch, but no translation is needed because we only collect the number of times these functionalities are used by the patient.

2.3.2. Information about disease

Name
Information about disease
Responsible
Asthma and COPD telehealth service CM
Description
-Information about disease and severity -Information about (dealing with) symptoms -Information about medication -Links to reliable websites
CONNECARE Subsystem
SMS
Comments
All information is in Dutch, but no translation is needed because we only collect the number of times these functionalities are used by the patient.

2.4. Work-plan Execution



2.4.1. Access to personal medical records and selected information

2.4.1.1. Conclusion, advice pulmonologist.

The information will be obtained directly via a link to the information system of Certe laboratories. The patient will be able to view the results of all test that were performed both numerical as graphically.

2.4.1.2. Crude results spirometry, questionnaires.

The patient will be able to see the crude results on the spirometry tests, and be able to access and see the results of the digital questionnaires.



2.4.1.3. Lung function curve.

The patient will be able to see a graphical representation of the lung function curve.

2.4.1.4. Display social support information.

The patient will be able to access a web link to the agenda of the local lung foundation. Also there will be information on social implications of the disease and information for patients and relatives/friends.

2.4.1.5. Display information about the disease.

There will be web links to reliable websites and personalized information about asthma/COPD, disease severity, and medication (based on medical results).

2.4.2. Lifestyle monitoring.

2.4.2.1. Smoking cessation

There will be information referral options to seek help and information about the benefits of smoking cessation.

2.4.2.2. Physical activity

Here the possibility and use of a FitBit is explained.

2.4.2.3. Diet and nutrition

Here the patient will be provided with referral options to seek assistance with keeping a dietary regime. Also, an online app program is offered (provided by VitalinQ).

2.4.3. Disease management and monitoring

2.4.3.1. Medication registration

Here the patient is provided with an up to date overview of all current medications.

2.4.3.2. Digital Questionnaires

Here the ABC tool (disease burden) is explained and shown to the patient.

2.4.3.3. Practical information about self-management

Here information is available mobility (physical activity) and community services.

2.4.3.4. Monitoring with CCQ/CARAT

An exacerbation prevention protocol is available for the patient in case complaints or symptoms worsen over time. Also regular follow-up meeting can be scheduled with care professionals.



2.4.4. Exacerbation

2.4.4.1. Asthma action plan (questionnaires and advice)

An action plan is in place in case of exacerbations.

2.4.4.2. COPD action plan (questionnaires and advice)

An action plan is in place in case of exacerbations.

Name
Access to medical results and selected information
Description
-Conclusion, advices pulmonologist (Certe) -Crude results spirometry, questionnaires (Certe) -Lung function curve (Certe) -Display social support information -Display information about disease
Responsible
Asthma and COPD telehealth service CM
CONNECARE Subsystem
SMS
Comments
None.

Name
Lifestyle monitoring
Description
-Smoking cessation -Physical activity -Diet and nutrition
Responsible
Asthma and COPD telehealth service CM
CONNECARE Subsystem
SMS
Comments
None.

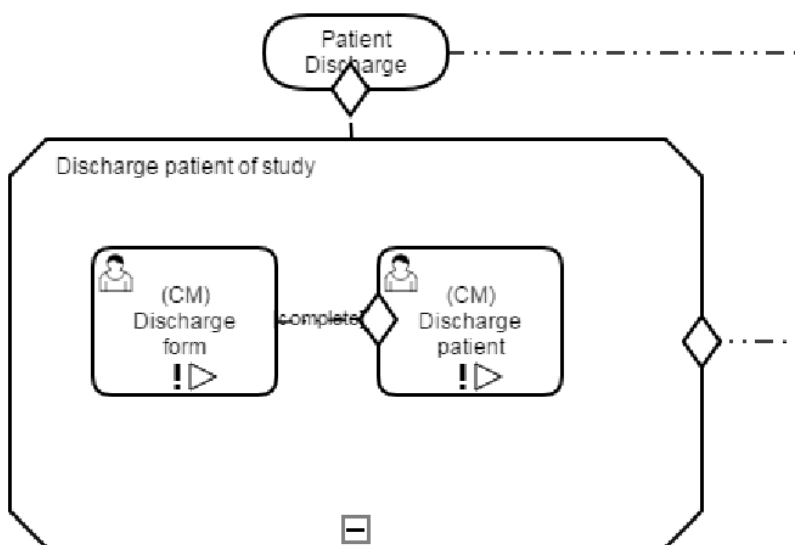
Name
Disease management and monitoring
Description
-Medication registration -Questionnaires (ABC tool) -Practical information about self-management -Monitoring with CCQ/CARAT
Responsible



Asthma and COPD telehealth service CM
CONNECARE Subsystem
SMS
Comments
None.

Name
Exacerbation
Description
-Asthma action plan (questionnaires and advice) -COPD action plan (questionnaires and advice)
Responsible
Asthma and COPD telehealth service CM
CONNECARE Subsystem
SMS
Comments
None.

2.5 Discharge



2.5.1. Satisfaction evaluation questionnaire

Name
Satisfaction evaluation questionnaire



Responsible
Patient
CONNECARE Subsystem
SMS
Comments
None



2. Data Collection

2.3. Case Identification

Hoi esther, hier komt een opsomming van alle vragenlijsten die we willen uitzetten. Ik heb mijn laatste overzicht voor je toegevoegd aan de email. Wellicht dat je ze nog op volledigheid kunt controleren.

2.4. Work-plan Execution

Reporting process and protocol to be defined by the SACM & SMS responsible.

2.4.1. Vital Signs Monitoring

The data will be obtained directly from the smart devices. The patient will be reminded to use the proper device corresponding with the prescription but no form will be showed to be filled. In case of devices not connected to the SMS (such as temperature) there will be a form to enter the data by the patient.

2.4.2. Rehabilitation Prescription - physical or cognitive exercise

The patient will have alerts in the SMS with the prescription and proper details. The patient will answer in the SMS app if he had done the exercise and how hard it was.

2.4.3. Walking Activity Prescription

The data will be obtained directly from the fitness trackers. The patient will be alert with the prescription and proper alerts but no form will be showed to be filled.

2.4.4. Medication Adherence Autocheck

The patient will be alert with the prescription and proper alerts, the patient will click a YES button after taking the medication.

2.5.1 Nutritional Instructions

The patient will enter data to his nutrition dairy in VitalinQ.

2.4.5. Autocheck Health Status

The patient will fill the form and the data will be sent to the SACM for the CM to review as necessary.

2.4.6. Social interventions

The CM/caregiver/patient will enter the status of the intervention that was entered to the SMS or SACM in the work plan definition.



2.4.7. Patient and Caregiver Education and Training

This form collects the status of educational events.

2.4.8. Diagnostic tests

The data will be sent to the SMS, the patient and the CM can enter the result of the test.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
DiagTest	Diagnostic tests	DATE	Date	Date of the test	Dd/mm/yyyy
DiagTest	Diagnostic tests	Type	Checkbox	Name of test	<TBD>
DiagTest	Diagnostic tests	Result	Num	Result	
DiagTest	Diagnostic tests	Result	Radio	Positive or Negative	1, Positive 2, Negative
DiagTest	Diagnostic tests	Comments	Free text	Comments	

2.4.9. Pain Test EVA

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
EVA0	Work-plan Execution – Pain Test EVA	Pain Test EVA			



2.5. Discharge from Clinical Process

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
discharge1	Discharge – Patient	Patient’s Discharge Notification	Radio	Notify the discharge to the patient?	0, No 1, Yes
discharge2	Discharge - Professional	Patient’s Discharge	radio	Discharge the patient?	0, No 1, Yes

2.5.1. Satisfaction evaluation questionnaire

Name
Satisfaction evaluation questionnaire
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
<TBD>



CONNECARE

Case Study 1 - Definition

Groningen – Embrace UMCG

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
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CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 02

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Work Package	Number	Title	

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input type="checkbox"/>			

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Abstract	
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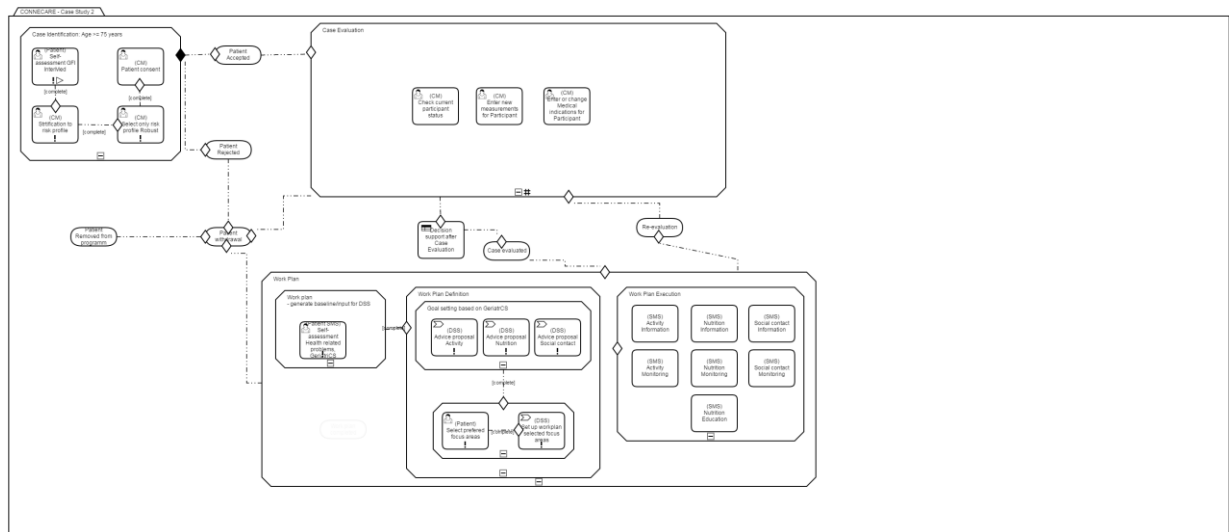


Executive Summary

This document summarizes the detailed flow of actions for Case 1 from patient identification through discharge from the study. The document also details all of the data to be collected and entered into the SACM for purposes of instructing the SMS as well as the documentation that will be needed for evaluation.



1. Case Study Diagram

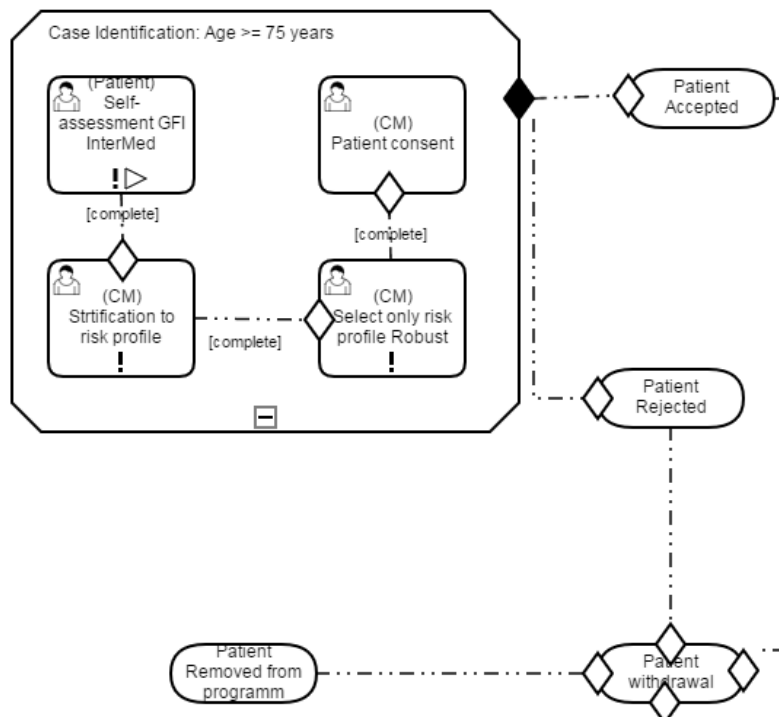




2. Forms Description by steps

This section presents all the forms used during the process of the Embrace program, an integrated elderly care model of CS1 in Groningen. Some of these forms will be performed by the SACM, some by the SMS and some by other systems external to CONNECARE.

2.1 Case Identification Criteria



2.1.1 Basic criteria

Name
Basic criteria
The text of the questionnaire
No formal questionnaire – yes/no answers to the following criteria
Description
1. Age >= 75
2. Participating in Embrace with the risk profile 'Robust', i.e. participants without complex care needs (INTERMED-E-SA <16) and relatively low levels of frailty (GFI <5).
3. Comprehension of the Dutch language (reading and writing).
4. Willing to sign informed consent and answer the questionnaires that are provided.
Responsible
Embrace Case Manager (CM)
CONNECARE Subsystem
The CM should enter the results (yes/no) in to the SACM
Comments
This will be done in Dutch, translation is needed. We will enter to the SACM data only for patients that are suitable according to inclusion criteria and gave their consent.



2.1.2 Self-assessment

Name
Self-assessment
The text of the questionnaire (NL and ENG)
Attached at the end of this document.
Description
The Groningen Frailty Indicator (GFI) and InterMed instruments.
Responsible
Patient (older adult)
CONNECARE Subsystem
SMS
Comments
This will be done in Dutch, translation is needed.

2.1.3 Stratification

Name
Stratification to risk profile
The text of the questionnaire
No formal questionnaire
Description
Stratification of older adults into risk profiles 'Robust', 'Frail' or 'Complex care needs'
Responsible
Embrace Case Manager (CM)
CONNECARE Subsystem
SACM.
Comments
This will be done in Dutch, translation is needed.

2.1.4 Patient selection

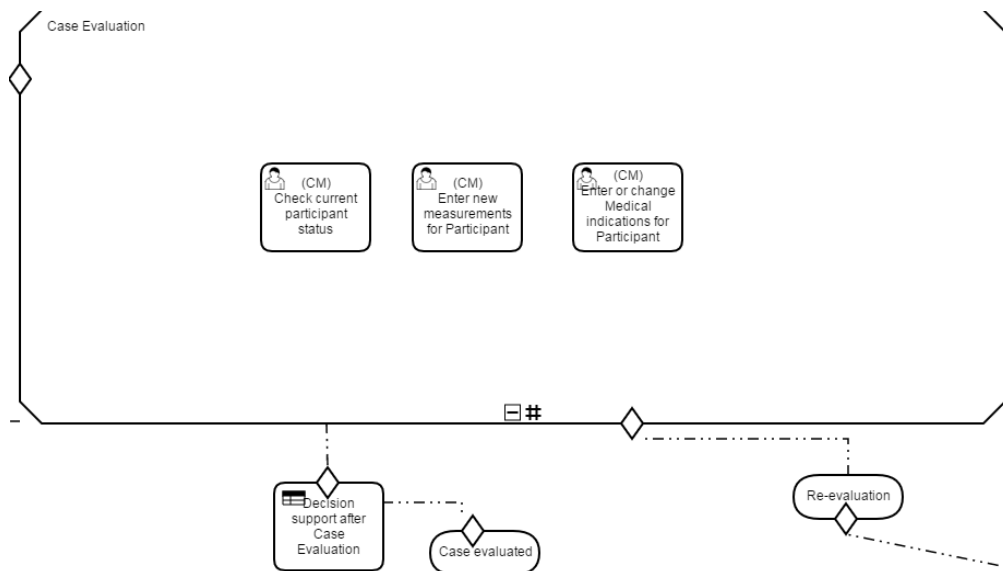
Name
Patient selection
The text of the questionnaire
No formal questionnaire
Description
Selection of older adults in the strata 'Robust' for inclusion
Responsible
Embrace Case Manager (CM)
CONNECARE Subsystem
SACM.
Comments
This will be done in Dutch, translation is needed.



2.1.5. Patient consent

Name
Patient Consent
The text of the questionnaire (NL)
No formal questionnaire – yes/no answer
Description
Consent form approved by the ethics committee, to be signed by the patient on hard copy.
Responsible
Embrace Case Manager (CM)
Comments
The CM should enter the result (yes/ no) in to the SACM.

2.2 Case Evaluation



2.2.1 Self-assessment (part 1)

Name
Self-assessment
The text of the questionnaire (NL and ENG)
Attached at the end of this document.
Description
Health related problems - GeriatrICS
Responsible
Patient (older adult)
CONNECARE Subsystem
SMS
Comments
This will be done in Dutch, translation is needed.



2.2.1 Self-assessment (part 2)

Name
Self-assessment
The text of the questionnaires (NL and ENG)
Attached at the end of this document.
Description
Baseline and follow-up measurement at 3 and 6 months. <ul style="list-style-type: none"> - EQ-5D - Visual Analogue Scale (VAS) Health - SF-36 (two questions) - Partners in Health Scale (PIH) - Care utilization - Well-being
Responsible
Patient (older adult)
CONNECARE Subsystem
SMS
Comments
This will be done in Dutch, translation is needed.

2.2.2. Check current participants status

Name
Check current participant status
The text of the questionnaire
No formal questionnaire
Description
Check current participant status
Responsible
Embrace Case Manager (CM)
CONNECARE Subsystem
SACM
Comments
None.

2.2.3. Enter new measurements

Name
Enter new measurements for participants.
The text of the questionnaire
No formal questionnaire
Description
Enter new measurements for participants.
Responsible
Embrace Case Manager (CM)
CONNECARE Subsystem
SACM
Comments

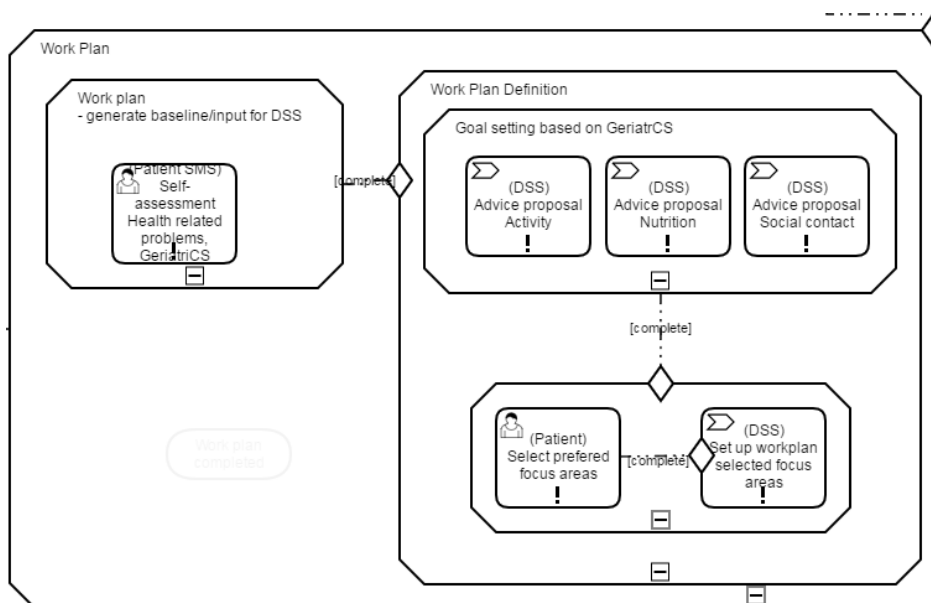


The CM will enter the results into the SACM.

2.2.4. Medical indications

Name
Medical indications
The text of the questionnaire
No formal questionnaire
Description
Enter or change medical indications for patient (older adult)
Responsible
Embrace Case Manager (CM)
CONNECARE Subsystem
SACM
Comments
The CM will enter the results into the SACM.

2.3. Work-plan Definition



2.3.1. Self-assessment

Name
Self-assessment
Description
Self-assessment of health related problems - GeriatrICS
Responsible
Patient (older adult)
CONNECARE Subsystem
SMS
Comments



None.

2.3.2. Goal setting

Name
Goal setting based on results GeriatrICS
Responsible
DSS
Description
Advise proposal on physical activity, nutrition and social contact.
CONNECARE Subsystem
DSS
Comments
Automated response of the DSS.

2.3.3. Select preferred focus areas

Name
Select preferred focus areas
Responsible
Patient (older adult)
Description
Select preferred focus areas based on suggestions made by DSS.
CONNECARE Subsystem
SMS
Comments
Fine-tuning of the suggestions made by the DSS.

2.3.4. Setup work plan selected focus areas

Name
Setup work plan selected focus areas
Responsible
DSS
Description
Setup work plan selected focus areas
CONNECARE Subsystem
DSS
Comments
Adaptations to the work plan based on suggestions patient (older adult)

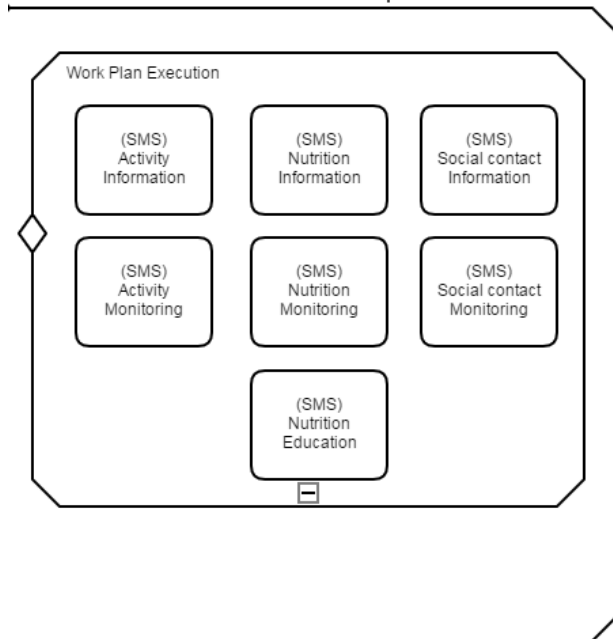
2.3.5. Goal attainment

Name
Goal attainment
Responsible
Patient (older adult)
Description



Scores on physical activity, nutrition and social contact.
CONNECARE Subsystem
SMS
Comments
Scores on domains physical activity, nutrition and social contact.

2.4. Work-plan Execution

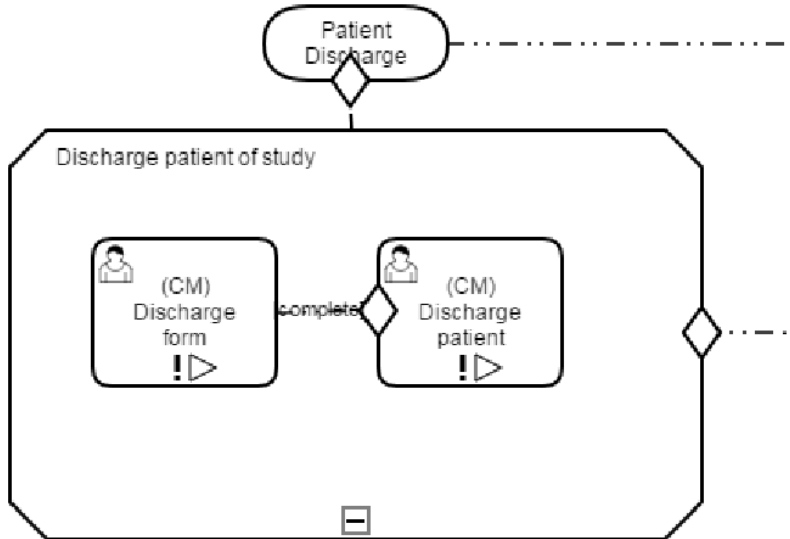


2.4.1. Work plan execution.

Name
Work plan execution.
Description
Follow-up (information and monitoring) of physical activity, nutrition and social contact.
Responsible
Patient (older adult)
CONNECARE Subsystem
SMS
Comments
None.



2.5 Discharge



2.5.1. Assessment of feasibility – Demand.

Name
Assessment of feasibility – Demand.
Description
The extent to which the CONNECARE solution is likely to be actually used by the intended recipients.
Responsible
Patient (older adult)
CONNECARE Subsystem
SMS
Comments
None.

2.5.2. Assessment of feasibility – Acceptability.

Name
Assessment of feasibility – Acceptability.
Description
The extent to which the CONNECARE solution is judged as satisfying to CONNECARE end-users.
Responsible
Patient (older adult)



CONNECARE Subsystem
SMS
Comments
None.

2.5.3. Assessment of feasibility – Implementation.

Name
Assessment of feasibility – Implementation.
Description
The extent to which the CONNECARE solution can be successfully delivered to intended recipients in this specific setting.
Responsible
Patient (older adult)
CONNECARE Subsystem
SMS
Comments
None.

2.5.4. Assessment of feasibility – Practicality.

Name
Assessment of feasibility – Practicality.
Description
The extent to which the CONNECARE solution is obtrusive.
Responsible
Patient (older adult)
CONNECARE Subsystem
SMS
Comments
None.

3. Data Collection

3.1. Case Identification

3.1.1. Technological test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Tech1	Case identification – Technological Test	Technological Test	radio	Internet connection	0, No 1, Yes
Tech2	Case identification – Technological Test	Technological Test	checkbox	Device	1, Smartphone 2, Tablet 3, Personal computer 0, Cap
Tech3	Case identification – Technological Test	Technological Test	radio	El seu cuidador principal fa anar:	1, Telèfon mòvil no tan sols per trucar. 2, Tablet. 3, Ordinador personal. 0, Cap
Tech4	Case identification – Technological Test	Technological Test	calc	Technological test result	Sum ([tech1],[tech2],[tech3]) == 0 , Not eligible Sum ([tech1],[tech2],[tech3]) >0 , Eligible

3.1.2. Patient consent

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
pConsent1	Case identification – Patient's Consent	Patient's Consent	radio	Agree to participate in the study as described in the document?	0, No 1, Yes



3.2. Work-plan Execution

Geriatrics

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
GERd510	Case evaluation – Geriatrics	Functioning	Likert	d510 Washing oneself	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERd510_ACT	Case evaluation – Geriatrics	Functioning	Radio	d510 Action readiness	1, yes 2, no
GERd520	Case evaluation – Geriatrics	Functioning	Likert	d520 Caring for body parts	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERd520_ACT	Case evaluation – Geriatrics	Functioning	Radio	d520 Action readiness	1, yes 2, no
GERd530	Case evaluation – Geriatrics	Functioning	Likert	d530 Toileting	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERd530_ACT	Case evaluation – Geriatrics	Functioning	Radio	d530 Action readiness	1, yes 2, no
GERd540	Case evaluation – Geriatrics	Functioning	Likert	d540 Dressing	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem



					10, complete problem
GERd540_ACT	Case evaluation – Geriatrics	Functioning	Radio	d540 Action readiness	1, yes 2, no
GERb240	Case evaluation – Geriatrics	Falling and mobility	Likert	b240 Sensations associated with hearing and vestibular function	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb240_ACT	Case evaluation – Geriatrics	Falling and mobility	Radio	b240 Action readiness	1, yes 2, no
GERb710	Case evaluation – Geriatrics	Falling and mobility	Likert	b710 Mobility of joint functions	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb710_ACT	Case evaluation – Geriatrics	Falling and mobility	Radio	b710 Action readiness	1, yes 2, no
GERb730	Case evaluation – Geriatrics	Falling and mobility	Likert	b730 Muscle power functions	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb730_ACT	Case evaluation – Geriatrics	Falling and mobility	Radio	b730 Action readiness	1, yes 2, no
GERd410	Case evaluation – Geriatrics	Falling and mobility	Likert	d410 Changing basic body position	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem



GERd410_ACT	Case evaluation – Geriatrics	Falling and mobility	Radio	d410 Action readiness	1, yes 2, no
GERd450	Case evaluation – Geriatrics	Falling and mobility	Likert	d450 Walking	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERd450_ACT	Case evaluation – Geriatrics	Falling and mobility	Radio	d450 Action readiness	1, yes 2, no
GERd470	Case evaluation – Geriatrics	Falling and mobility	Likert	d470 Using transportation	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERd470_ACT	Case evaluation – Geriatrics	Falling and mobility	Radio	d470 Action readiness	1, yes 2, no
GERd465	Case evaluation – Geriatrics	Falling and mobility	Likert	d465 Moving with special means	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERd465_ACT	Case evaluation – Geriatrics	Falling and mobility	Radio	d465 Action readiness	1, yes 2, no
GERd550	Case evaluation – Geriatrics	Nutrition and malnutrition	Likert	d550 Eating	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERd550_ACT	Case evaluation – Geriatrics	Nutrition and malnutrition	Radio	d550 Action readiness	1, yes 2, no



GERd560	Case evaluation – Geriatrics	Nutrition and malnutrition	Likert	d560 Drinking	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERd560_ACT	Case evaluation – Geriatrics	Nutrition and malnutrition	Radio	d560 Action readiness	1, yes 2, no
GERb530	Case evaluation – Geriatrics	Nutrition and malnutrition	Likert	b530 Weight maintenance functions	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb530_ACT	Case evaluation – Geriatrics	Nutrition and malnutrition	Radio	b530 Action readiness	1, yes 2, no
GERb620	Case evaluation – Geriatrics	Urinary incontinence	Likert	b620 Urinating functions	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb620_ACT	Case evaluation – Geriatrics	Urinary incontinence	Radio	b620 Action readiness	1, yes 2, no
GERb525	Case evaluation – Geriatrics	Urinary incontinence	Likert	b525 Defecation functions	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb525_ACT	Case evaluation – Geriatrics	Urinary incontinence	Radio	b525 Action readiness	1, yes 2, no
GERb152	Case evaluation – Geriatrics	Mood and depression	Likert	b152 Mood	0, no problem 1-2, slight problem



					3-6, moderate problem 7-9, serious problem 10, complete problem
GERb152_ACT	Case evaluation – Geriatrics	Mood and depression	Radio	b152 Action readiness	1, yes 2, no
GERe310	Case evaluation – Geriatrics	Loneliness	Likert	e310 Immediate family	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERe310_ACT	Case evaluation – Geriatrics	Loneliness	Radio	e310 Action readiness	1, yes 2, no
GERe320	Case evaluation – Geriatrics	Loneliness	Likert	e320 Friends	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERe320_ACT	Case evaluation – Geriatrics	Loneliness	Radio	e320 Action readiness	1, yes 2, no
GERe325	Case evaluation – Geriatrics	Loneliness	Likert	e325 Acquaintances, peers, colleagues, neighbours and community members	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERe325_ACT	Case evaluation – Geriatrics	Loneliness	Radio	e325 Action readiness	1, yes 2, no
GERd760	Case evaluation – Geriatrics	Loneliness	Likert	d760 Family relationships	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem



					10, complete problem
GERd760_ACT	Case evaluation – Geriatrics	Loneliness	Radio	d760 Action readiness	1, yes 2, no
GERb144	Case evaluation – Geriatrics	Cognition	Likert	b144 Memory functions	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb144_Act	Case evaluation – Geriatrics	Cognition	Radio	b144 Action readiness	1, yes 2, no
GERb230	Case evaluation – Geriatrics	Hearing	Likert	b230 Hearing functions	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb230_ACT	Case evaluation – Geriatrics	Hearing	Radio	b230 Action readiness	1, yes 2, no
GERb210	Case evaluation – Geriatrics	Visus	Likert	b210 Seeing functions	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb210_ACT	Case evaluation – Geriatrics	Visus	Radio	b210 Action readiness	1, yes 2, no
GERe1101	Case evaluation – Geriatrics	Polypharmacy	Likert	e1101 Medicines	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem



GERe1101_ACT	Case evaluation – Geriatrics	Polypharmacy	Radio	e1101 Action readiness	1, yes 2, no
GERb410	Case evaluation – Geriatrics	Body functions	Likert	b410 Heart functions	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb410_ACT	Case evaluation – Geriatrics	Body functions	Radio	b410 Action readiness	1, yes 2, no
GERb420	Case evaluation – Geriatrics	Body functions	Likert	b420 Blood pressure functions	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb420_ACT	Case evaluation – Geriatrics	Body functions	Radio	b420 Action readiness	1, yes 2, no
GERb455	Case evaluation – Geriatrics	Body functions	Likert	b455 Exercise tolerance functions	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb455_ACT	Case evaluation – Geriatrics	Body functions	Radio	b455 Action readiness	1, yes 2, no
GERb810	Case evaluation – Geriatrics	Body functions	Likert	b810 Protective functions of the skin	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb810_ACT	Case evaluation – Geriatrics	Body functions	Radio	b810 Action readiness	1, yes 2, no



GERe570	Case evaluation – Geriatrics	Services	Likert	e570 Social security services, systems and policies	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERe570_ACT	Case evaluation – Geriatrics	Services	Radio	e570 Action readiness	1, yes 2, no
GERe575	Case evaluation – Geriatrics	Services	Likert	e575 General social support services, systems, policies	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERe575_ACT	Case evaluation – Geriatrics	Services	Radio	e575 Action readiness	1, yes 2, no
GERe580	Case evaluation – Geriatrics	Services	Likert	e580 Health services, systems, policies	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERe580_ACT	Case evaluation – Geriatrics	Services	Radio	e580 Action readiness	1, yes 2, no
GERb280	Case evaluation – Geriatrics	Pain	Likert	b280 Painfulness	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERb280_ACT	Case evaluation – Geriatrics	Pain	Radio	b280 Action readiness	1, yes 2, no
GERb134	Case evaluation – Geriatrics	Sleeping	Likert	b134 Sleep	0, no problem 1-2, slight problem



					3-6, moderate problem 7-9, serious problem 10, complete problem
GERb134_ACT	Case evaluation – Geriatrics	Sleeping	Radio	b134 Action readiness	1, yes 2, no
GERd920	Case evaluation – Geriatrics	Recreation	Likert	d920 Recreation and leisure	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERd920_ACT	Case evaluation – Geriatrics	Recreation	Radio	d920 Action readiness	1, yes 2, no

Health assessment

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
EQ5MO	Case evaluation – health assessment	EQ-5D	Radio	Walking	1, I have no walking problems 2, I have some walking problems 3, I have moderate walking problems 4, I have severe walking problems 5, I am not able to walk
EQ5SC	Case evaluation – health assessment	EQ-5D	Radio	Self-care	1, I have no washing or dressing problems 2, I have some washing or dressing problems 3, I have moderate washing or dressing problems 4, I have severe washing or dressing problems 5, I am not able to wash or dress myself



EQ5ACT	Case evaluation – health assessment	EQ-5D	Radio	Daily activity	1, I have no daily activity problems 2, I have some daily activity problems 3, I have moderate daily activity problems 4, I have severe daily activity problems 5, I am not able to perform my daily activities
EQ5PAIN	Case evaluation – health assessment	EQ-5D	Radio	Pain/ complaints	1, I have no pain or complaints 2, I have some pain or complaints 3, I have moderate pain or complaints 4, I have severe pain or complaints 5, I have extreme pain or complaints
EQ5ANX	Case evaluation – health assessment	EQ-5D	Radio	Mood	1, I am not anxious or depressed 2, I am a bit anxious or depressed 3, I am moderately anxious or depressed 4, I am very anxious or depressed 5, I am extreme anxious or depressed
EQ5C	Case evaluation – health assessment	EQ-5D	Radio	Cognitive functions	1, I have no problems concerning my memory, attention or thinking 2, I have some problems concerning my memory, attention or thinking 3, I have severe problems concerning my memory, attention or thinking
EQ5_VAS	Case evaluation – health assessment	EQ-5D-VAS	Likert	Health today	Range: 0 - 100 0 = the worst health you can imagine 100 = the best health you can imagine
HEALTH1	Case evaluation – health assessment	SF-36	Radio	General health	1, Excellent 2, Very good 3, Good 4, Reasonable 5, Bad



HEALTH2	Case evaluation – health assessment	SF-36	Radio	Health compared to one year ago	1, Much better 2, A bit better 3, About the same 4, A bit worse 5, Much worse
PIH-OA1	Case evaluation – health assessment	PIH-OA	Likert	Knowledge of aging	Range: 1 - 8 1, little 4, some 8, a lot
PIH-OA2	Case evaluation – health assessment	PIH-OA	Likert	Knowlegde of care and treatment	Range: 1 - 8 1, little 4, some 8, a lot
PIH-OA3	Case evaluation – health assessment	PIH-OA	Likert	Self-monitoring of aging	Range: 1 - 8 1, never 4, sometimes 8, always
PIH-OA4	Case evaluation – health assessment	PIH-OA	Likert	Zelf-management of aging	Range: 1 - 8 1, never 4, sometimes 8, always
PIH-OA5	Case evaluation – health assessment	PIH-OA	Likert	Coping with aging regarding physical activity	Range: 1 - 8 1, not so good 4, reasonable 8, very good
PIH-OA6	Case evaluation – health assessment	PIH-OA	Likert	Coping with aging regarding my emotional feelings	Range: 1 - 8 1, not so good 4, reasonable 8, very good



PIH-OA7	Case evaluation – health assessment	PIH-OA	Likert	Coping with aging regarding my social life	Range: 1 - 8 1, not so good 4, reasonable 8, very good
PIH-OA8	Case evaluation – health assessment	PIH-OA	Likert	Healthy living	Range: 1 - 8 1, not so good 4, reasonable 8, very good
HOSP	Case evaluation – health assessment	Topics-MDS	Radio Text	Hospital admission	0, no 1, yes, ... days in total
GP	Case evaluation – health assessment	Topics-MDS	Radio Text	GP visits	0, no 1, yes ... times
HOM_VIS	Case evaluation – health assessment	Topics-MDS	Radio Text	GP Home visits	0, no 1, yes ... times
HOM_CARE	Case evaluation – health assessment	Topics-MDS	Radio Text	Home care	0, no 1, yes ... hours per week
NURS	Case evaluation – health assessment	Topics-MDS	Radio Text	Nursing home – temporary admission	0, no 1, yes, ... weeks in total
DAY_CARE	Case evaluation – health assessment	Topics-MDS	Radio Text	Day care	0, no 1, yes ... days per week
DAY_TREAT	Case evaluation – health assessment	Topics-MDS	Radio Text	Day treatment	0, no 1, yes ... days per week
EMER	Case evaluation – health assessment	Topics-MDS	Radio Text	Emergency department visits	0, no 1, yes ... times
WHOS_1	Case evaluation – health assessment	WBI	Radio	I have felt cheerful and in good spirits	1, all of the time 2, most of the time 3, more than half of the time 4, less than half of the time 5, sometimes 6, not at all



WHO5_2	Case evaluation – health assessment	WBI	Radio	I have felt calm and relaxed	1, all of the time 2, most of the time 3, more than half of the time 4, less than half of the time 5, sometimes 6, not at all
WHO5_3	Case evaluation – health assessment	WBI	Radio	I have felt active and vigorous	1, all of the time 2, most of the time 3, more than half of the time 4, less than half of the time 5, sometimes 6, not at all
WHO5_4	Case evaluation – health assessment	WBI	Radio	I woke up feeling fresh and rested	1, all of the time 2, most of the time 3, more than half of the time 4, less than half of the time 5, sometimes 6, not at all
WHO5_5	Case evaluation – health assessment	WBI	Radio	My daily life has been filled with things that interest me	1, all of the time 2, most of the time 3, more than half of the time 4, less than half of the time 5, sometimes 6, not at all

3.3. Work plan execution.

Geriatrics – shortened version

This questionnaire should be filled out twice during work-plan execution: 3 months after the start of the program and 6 months after the start of the program.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
GERd510	Case evaluation – Geriatrics	Functioning	Likert	d510 Washing oneself	0, no problem 1-2, slight problem 3-6, moderate problem 7-9, serious problem 10, complete problem
GERd520	Case evaluation – Geriatrics	Functioning	Likert	d520 Caring for body parts	Idem
GERd530	Case evaluation – Geriatrics	Functioning	Likert	d530 Toileting	Idem
GERd540	Case evaluation – Geriatrics	Functioning	Likert	d540 Dressing	Idem



GERb240	Case evaluation – Geriatrics	Falling and mobility	Likert	b240 Sensations associated with hearing and vestibular function	Idem
GERb710	Case evaluation – Geriatrics	Falling and mobility	Likert	b710 Mobility of joint functions	Idem
GERb730	Case evaluation – Geriatrics	Falling and mobility	Likert	b730 Muscle power functions	Idem
GERd410	Case evaluation – Geriatrics	Falling and mobility	Likert	d410 Changing basic body position	Idem
GERd450	Case evaluation – Geriatrics	Falling and mobility	Likert	d450 Walking	Idem
GERd470	Case evaluation – Geriatrics	Falling and mobility	Likert	d470 Using transportation	Idem
GERd465	Case evaluation – Geriatrics	Falling and mobility	Likert	d465 Moving with special means	Idem
GERd550	Case evaluation – Geriatrics	Nutrition and malnutrition	Likert	d550 Eating	Idem
GERd560	Case evaluation – Geriatrics	Nutrition and malnutrition	Likert	d560 Drinking	Idem
GERb530	Case evaluation – Geriatrics	Nutrition and malnutrition	Likert	b530 Weight maintenance functions	Idem
GERb620	Case evaluation – Geriatrics	Urinary incontinence	Likert	b620 Urinating functions	Idem
GERb525	Case evaluation – Geriatrics	Urinary incontinence	Likert	b525 Defecation functions	Idem
GERb152	Case evaluation – Geriatrics	Mood and depression	Likert	b152 Mood	Idem
GERe310	Case evaluation – Geriatrics	Loneliness	Likert	e310 Immediate family	Idem
GERe320	Case evaluation – Geriatrics	Loneliness	Likert	e320 Friends	Idem
GERe325	Case evaluation – Geriatrics	Loneliness	Likert	e325 Acquaintances, peers, colleagues,	Idem



				neighbours and community members	
GERd760	Case evaluation – Geriatrics	Loneliness	Likert	d760 Family relationships	Idem
GERb144	Case evaluation – Geriatrics	Cognition	Likert	b144 Memory functions	Idem
GERb230	Case evaluation – Geriatrics	Hearing	Likert	b230 Hearing functions	Idem
GERb210	Case evaluation – Geriatrics	Visus	Likert	b210 Seeing functions	Idem
GERe1101	Case evaluation – Geriatrics	Polypharmacy	Likert	e1101 Medicines	Idem
GERb410	Case evaluation – Geriatrics	Body functions	Likert	b410 Heart functions	Idem
GERb420	Case evaluation – Geriatrics	Body functions	Likert	b420 Blood pressure functions	Idem
GERb455	Case evaluation – Geriatrics	Body functions	Likert	b455 Exercise tolerance functions	Idem
GERb810	Case evaluation – Geriatrics	Body functions	Likert	b810 Protective functions of the skin	Idem
GERe570	Case evaluation – Geriatrics	Services	Likert	e570 Social security services, systems and policies	Idem
GERe575	Case evaluation – Geriatrics	Services	Likert	e575 General social support services, systems, policies	Idem
GERe580	Case evaluation – Geriatrics	Services	Likert	e580 Health services, systems, policies	Idem
GERb280	Case evaluation – Geriatrics	Pain	Likert	b280 Painfulness	Idem
GERb134	Case evaluation – Geriatrics	Sleeping	Likert	b134 Sleep	Idem



GERd920	Case evaluation – Geriatrics	Recreation	Likert	d920 Recreation and leisure	Idem
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Health assessment

This is the same questionnaire that was filled out during case evaluation. This questionnaire should be filled out again 3 months after the start of the program, and 6 months after the start of the program.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
EQ5MO	Case evaluation – health assessment	EQ-5D	Radio	Walking	1, I have no walking problems 2, I have some walking problems 3, I have moderate walking problems 4, I have severe walking problems 5, I am not able to walk
EQ5SC	Case evaluation – health assessment	EQ-5D	Radio	Self-care	1, I have no washing or dressing problems 2, I have some washing or dressing problems 3, I have moderate washing or dressing problems 4, I have severe washing or dressing problems 5, I am not able to wash or dress myself
EQ5ACT	Case evaluation – health assessment	EQ-5D	Radio	Daily activity	1, I have no daily activity problems 2, I have some daily activity problems 3, I have moderate daily activity problems 4, I have severe daily activity problems 5, I am not able to perform my daily activities
EQ5PAIN	Case evaluation – health assessment	EQ-5D	Radio	Pain/ complaints	1, I have no pain or complaints 2, I have some pain or complaints 3, I have moderate pain or complaints



					4, I have severe pain or complaints 5, I have extreme pain or complaints
EQ5ANX	Case evaluation – health assessment	EQ-5D	Radio	Mood	1, I am not anxious or depressed 2, I am a bit anxious or depressed 3, I am moderately anxious or depressed 4, I am very anxious or depressed 5, I am extreme anxious or depressed
EQ5C	Case evaluation – health assessment	EQ-5D	Radio	Cognitive functions	1, I have no problems concerning my memory, attention or thinking 2, I have some problems concerning my memory, attention or thinking 3, I have severe problems concerning my memory, attention or thinking
EQ5_VAS	Case evaluation – health assessment	EQ-5D-VAS	Likert	Health today	Range: 0 - 100 0 = the worst health you can imagine 100 = the best health you can imagine
HEALTH1	Case evaluation – health assessment	SF-36	Radio	General health	1, Excellent 2, Very good 3, Good 4, Reasonable 5, Bad
HEALTH2	Case evaluation – health assessment	SF-36	Radio	Health compared to one year ago	1, Much better 2, A bit better 3, About the same 4, A bit worse 5, Much worse
PIH-OA1	Case evaluation – health assessment	PIH-OA	Likert	Knowledge of aging	Range: 1 - 8 1, little 4, some 8, a lot



PIH-OA2	Case evaluation – health assessment	PIH-OA	Likert	Knowlegde of care and treatment	Range: 1 - 8 1, little 4, some 8, a lot
PIH-OA3	Case evaluation – health assessment	PIH-OA	Likert	Self-monitoring of aging	Range: 1 - 8 1, never 4, sometimes 8, always
PIH-OA4	Case evaluation – health assessment	PIH-OA	Likert	Zelf-management of aging	Range: 1 - 8 1, never 4, sometimes 8, always
PIH-OA5	Case evaluation – health assessment	PIH-OA	Likert	Coping with aging regarding physical activity	Range: 1 - 8 1, not so good 4, reasonable 8, very good
PIH-OA6	Case evaluation – health assessment	PIH-OA	Likert	Coping with aging regarding my emotional feelings	Range: 1 - 8 1, not so good 4, reasonable 8, very good
PIH-OA7	Case evaluation – health assessment	PIH-OA	Likert	Coping with aging regarding my social life	Range: 1 - 8 1, not so good 4, reasonable 8, very good
PIH-OA8	Case evaluation – health assessment	PIH-OA	Likert	Healthy living	Range: 1 - 8 1, not so good 4, reasonable 8, very good



HOSP	Case evaluation – health assessment	Topics-MDS	Radio Text	Hospital admission	0, no 1, yes, ... days in total
GP	Case evaluation – health assessment	Topics-MDS	Radio Text	GP visits	0, no 1, yes ... times
HOM_VIS	Case evaluation – health assessment	Topics-MDS	Radio Text	Home visits	0, no 1, yes ... times
HOM_CARE	Case evaluation – health assessment	Topics-MDS	Radio Text	Home care	0, no 1, yes ... hours per week
NURS	Case evaluation – health assessment	Topics-MDS	Radio Text	Nursing home – temporary admission	0, no 1, yes, ... weeks in total
DAY_CARE	Case evaluation – health assessment	Topics-MDS	Radio Text	Day care	0, no 1, yes ... days per week
DAY_TREAT	Case evaluation – health assessment	Topics-MDS	Radio Text	Day treatment	0, no 1, yes ... days per week
EMER	Case evaluation – health assessment	Topics-MDS	Radio Text	Emergency department visits	0, no 1, yes ... times
WHO5_1	Case evaluation – health assessment	WBI	Radio	I have felt cheerful and in good spirits	1, all of the time 2, most of the time 3, more than half of the time 4, less than half of the time 5, sometimes 6, not at all
WHO5_2	Case evaluation – health assessment	WBI	Radio	I have felt calm and relaxed	1, all of the time 2, most of the time 3, more than half of the time 4, less than half of the time 5, sometimes 6, not at all
WHO5_3	Case evaluation – health assessment	WBI	Radio	I have felt active and vigorous	1, all of the time 2, most of the time 3, more than half of the time 4, less than half of the time 5, sometimes 6, not at all
WHO5_4	Case evaluation – health assessment	WBI	Radio	I woke up feeling fresh and rested	1, all of the time 2, most of the time 3, more than half of the time 4, less than half of the time 5, sometimes 6, not at all
WHO5_5	Case evaluation – health assessment	WBI	Radio	My daily life has been filled with	1, all of the time 2, most of the time 3, more than half of the time 4, less than half of the time 5, sometimes 6, not at all



				things that interest me	
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3.4. Discharge

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
discharge1	Discharge – Patient	Patient’s Discharge Notification	Radio	Notify the discharge to the patient?	0, No 1, Yes
discharge2	Discharge - Professional	Patient’s Discharge	radio	Discharge the patient?	0, No 1, Yes

3.4.1. Assessment of the feasibility.

Name
Self-reported questionnaire
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
<TBD>



CONNECARE

Case Study 2 - Definition

Groningen – Surgical case UMCG

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 02

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Full title	Personalised Connected Care for Complex Chronic Patients		
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Deliverable	Number	Title
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Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
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Abstract	
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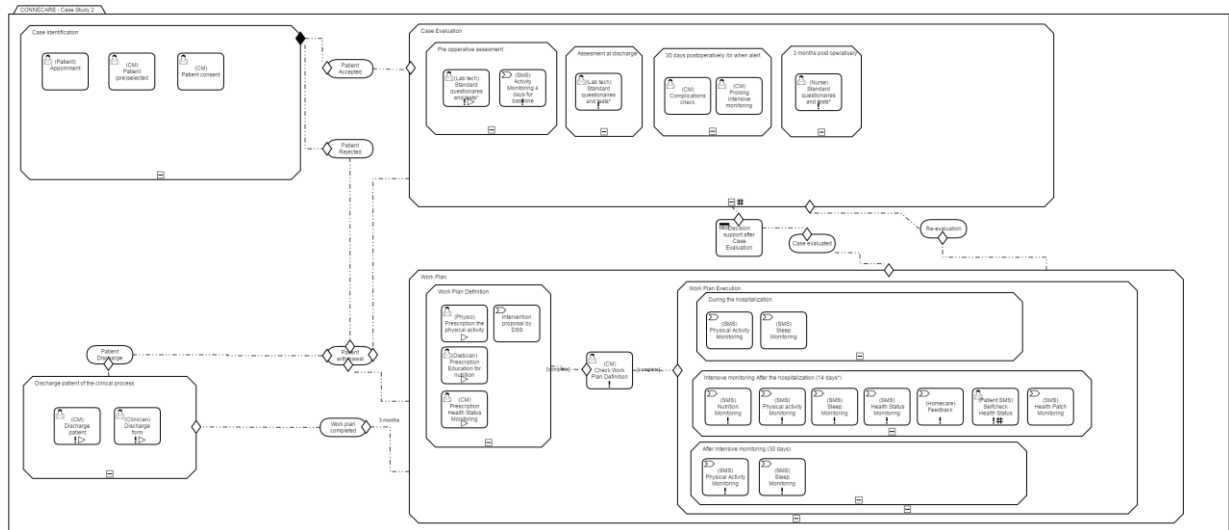


Executive Summary

This document summarizes the detailed flow of actions for Case 2 from patient identification through discharge from the study. The document also details all of the data to be collected and entered into the SACM for purposes of instructing the SMS as well as the documentation that will be needed for evaluation.



1. Case Study Diagram

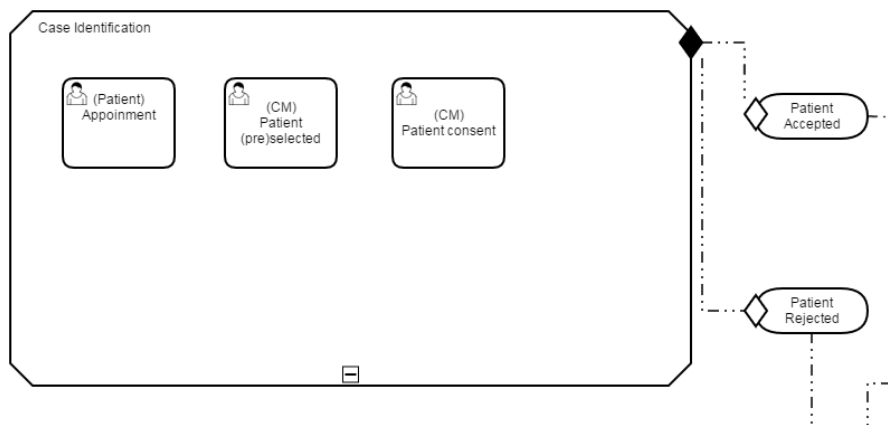




2. Forms Description by steps

This section presents all the forms used during the process of the surgical case study (CS2) in Groningen. Some of these forms will be performed by the SACM, some by the SMS and some by other systems external to CONNECARE.

2.1 Case Identification Criteria



2.1.1 Basic criteria

Name
Basic criteria
The text of the questionnaire
No formal questionnaire – yes/no answers to the following criteria
Description
1. Oncological patients aged 65 years or older. 2. Patient or caregiver are in possession of and able to use a smart phone (android/apple). 3. Candidate for elective surgery for a solid tumour. 4. Scheduled for high risk surgery, defined as intracavitary surgery lasting more than 180 minutes. 5. Written informed consent given according to local regulations.
Responsible
Case Manager (CM)
CONNECARE Subsystem
The CM should enter the results (yes/no) in to the SACM
Comments
This will be done in Dutch, translation is needed. We will enter to the SACM data only for patients that are suitable according to inclusion criteria and gave their consent.

2.1.2. Physical classification

Name
ASA Physical Status Classification System
The text of the questionnaire (NL and ENG)
Attached at the end of this document.
Description

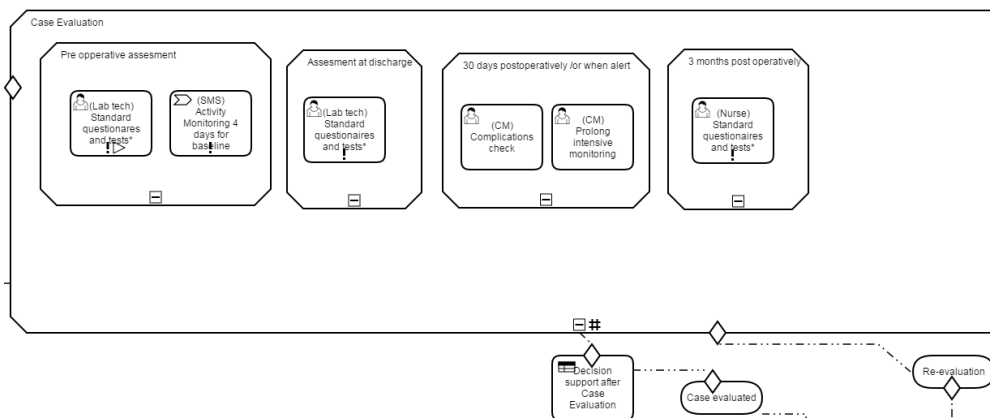


ASA Physical Status Classification System
Responsible
Case Manager (CM)
Comments
The CM should enter the results into the SACM.

2.1.3. Patient consent

Name
Patient Consent
The text of the questionnaire (NL)
No formal questionnaire – yes/no answer
Description
Consent form approved by the ethics committee, to be signed by the patient on hard copy.
Responsible
Case Manager (CM)
Comments
The CM should enter the result (yes/ no) in to the SACM.

2.2 Case Evaluation



2.2.1 Pre-operative assessment: standard questionnaires and tests.

Name
Pre-operative assessment: standard questionnaires and tests.
The text of the questionnaire (NL and ENG)
Attached at the end of this document (except for the real-life performed questionnaires and tests).
Description
Pre-operative assessment (digital questionnaires)
- Charlson comorbidity index
- Groningen Frailty Indicator (GFI)
- Hospital Anxiety and Depression Scale (HADS)
- Activities of Daily Living (ADL)
- Instrumental Activities of Daily Living (iADL)
- EORTC QLQ C-30
- EORTC QLQ-ELD 14



<ul style="list-style-type: none"> - Mini Nutritional Assessment-Short Form (MNA-SF) - Nutritional risk screening (NRS) - International Physical Activity Questionnaire (IPAQ)
<p>Pre-operative assessment (real-life performed questionnaires and tests)</p> <ul style="list-style-type: none"> - Timed-up and Go (TUG) - Hand grip strength test - Cognitive functioning: Mini Mental State Examination (MMSE), Rey's Auditory Verbal Learning Test (TMT) part A and B, Test of Everyday Attention: Elevator Task (TEA), Nederlandse Leestest voor Volwassenen (NLV), Verbal Fluency Task (VFT) and the Digit Span (DS).
Responsible
Case Manager (CM)
CONNECARE Subsystem
SACM
Comments
None.

2.2.2. Pre-operative assessment: activity monitoring

Name
Pre-operative assessment: activity monitoring
The text of the questionnaire
No formal questionnaire
Description
4 day monitoring of physical activity monitoring using activity tracker
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
Automated records taken from mobile device.

2.2.3. Assessment at hospital discharge: standard questionnaires and tests.

Name
Assessment at hospital discharge
The text of the questionnaire (NL and ENG)
Attached at the end of this document (except for the real-life performed questionnaires and tests).
Description
<p>Assessment at discharge (digital questionnaires).</p> <ul style="list-style-type: none"> - Groningen Frailty Indicator (GFI) - Hospital Anxiety and Depression Scale (HADS) - Activities of Daily Living (ADL) - Instrumental Activities of Daily Living (iADL) - EORTC QLQ C-30 - EORTC QLQ-ELD 14 - Mini Nutritional Assessment-Short Form (MNA-SF) - Nutritional risk screening (NRS) <p>Assessment at discharge (real-life performed questionnaires and tests)</p> <ul style="list-style-type: none"> - Timed-up and Go (TUG) - Hand grip strength test - Complication: Delirium Observation Screening (DOS), Confusion Assessment Method (CAM)

-ICU.
Responsible
Case Manager (CM)
CONNECARE Subsystem
SMS (digital questionnaires) and SACM (real-life questionnaires and tests)
Comments
None.

2.2.4. Assessment at hospital discharge: activity monitoring

Name
Assessment at hospital discharge: activity monitoring
The text of the questionnaire
No formal questionnaire
Description
4 days monitoring starting 1 st postoperative day using activity tracker: <ul style="list-style-type: none"> - Energy expenditure - Sleep - Activity - Heart rate
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
Automated records taken from mobile device.

2.2.5. Postdischarge monitoring.

Name
Postoperative monitoring
The text of the questionnaire
No formal questionnaire
Description
Daily reporting and notifications. 14 days monitoring starting 1 st postdischarge day using (a) activity tracker (energy expenditure, sleep, activity, heart rate) and (b) CONNECARE app (pain, intake, weight, temperature, mood).
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
Automated records taken from mobile device.

2.2.6. Postoperative and 30 days follow-up: complications.

Name
Postoperative and 30 days follow-up.
The text of the questionnaire (NL and ENG)



Attached at the end of this document.
Description
<ol style="list-style-type: none"> 1. Decide on prolonging intensive monitoring: decide at end of intensive monitoring (day 14) 2. Complications: Clavien-Dindo score (scored on day 30 postoperative).
Responsible
Case Manager (CM)
CONNECARE Subsystem
SACM
Comments
None.

2.2.7. 3 months postoperative follow-up: standard questionnaires and tests.

Name
Assessment at 3 months postoperatively.
The text of the questionnaire (NL and ENG)
Attached at the end of this document (except for the real-life performed questionnaires and tests).
Description
<p>3 months assessment (digital questionnaires):</p> <ul style="list-style-type: none"> - Groningen Frailty Indicator (GFI) - Hospital Anxiety and Depression Scale (HADS) - Activities of Daily Living (ADL) - Instrumental Activities of Daily Living (iADL) - EORTC QLQ C-30 - EORTC QLQ-ELD 14 - Mini Nutritional Assessment-Short Form (MNA-SF) - Nutritional risk screening (NRS) <p>3 months assessment (real-life performed questionnaires and tests):</p> <ul style="list-style-type: none"> - Timed-up and Go (TUG) - Hand grip strength test - Cognitive functioning: Mini Mental State Examination (MMSE), Rey's Auditory Verbal Learning Test (TMT) part A and B, Test of Everyday Attention: Elevator Task (TEA), Nederlandse Leestest voor Volwassenen (NLV), Verbal Fluency Task (VFT) and the Digit Span (DS).
Responsible
Case Manager (CM)
CONNECARE Subsystem
SACM
Comments
None.

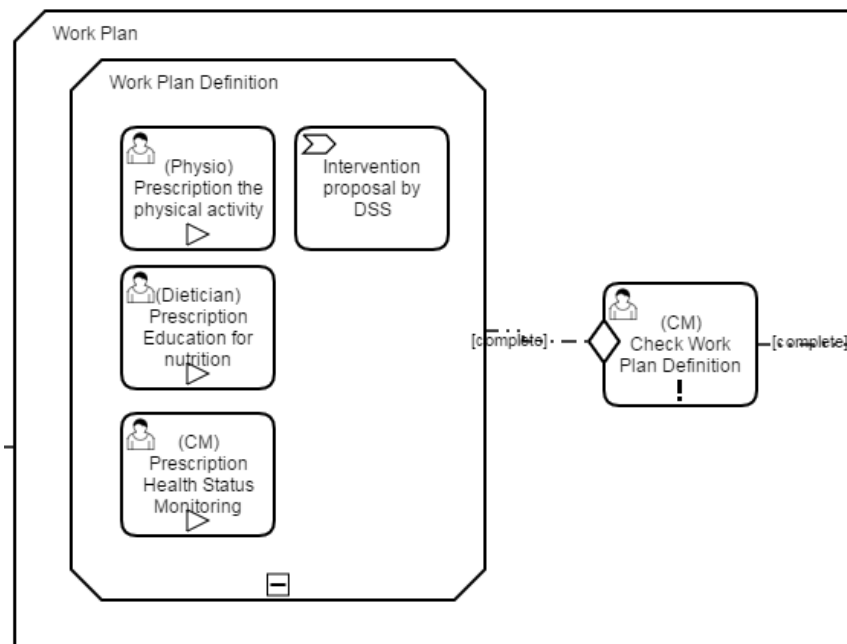
2.2.8. Assessment 3 months postoperatively at home: activity monitoring

Name
Assessment 3 months postoperatively at home: activity monitoring
The text of the questionnaire
No formal questionnaire
Description
<p>4 days monitoring using activity tracker:</p> <ul style="list-style-type: none"> - Energy expenditure - Sleep



- Activity - Heart rate
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
Automated records taken from mobile device.

2.2. Work-plan Definition



2.3.1. Prescription of activities.

Name
Prescription of activities.
Description
Prescription of activities in the domains physical activity, nutrition and health status monitoring.
Responsible
Case Manager (CM)
CONNECARE Subsystem
SACM
Comments
None.

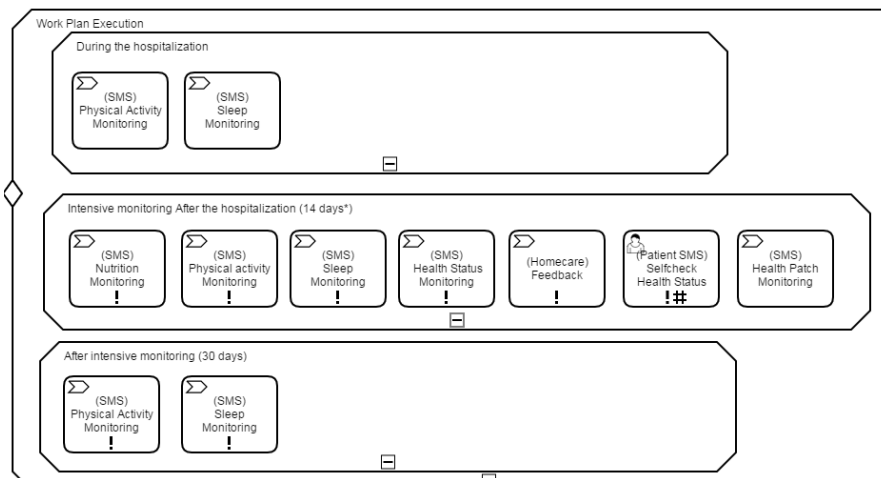
2.3.2. Intervention proposal

Name
Intervention proposal



Responsible
DSS
Description
Advise proposal on physical activity, nutrition and health status monitoring.
CONNECARE Subsystem
DSS
Comments
Automated response of the DSS.

2.4. Work-plan Execution



2.4.1. During hospitalization

Name
Work plan execution during hospitalization.
Description
Follow-up (information and monitoring) of physical activity, and sleep monitoring.
Responsible
Patient.
CONNECARE Subsystem
SMS
Comments
Automated records taken from mobile device.

2.4.2. Intensive monitoring (14 days) after hospitalization

Name
Intensive monitoring (14 days) after hospitalization
Description
Follow-up (information and monitoring) of: <ul style="list-style-type: none"> - Physical activity, nutrition, health status and sleep monitoring. - Home care. - Self-check health status

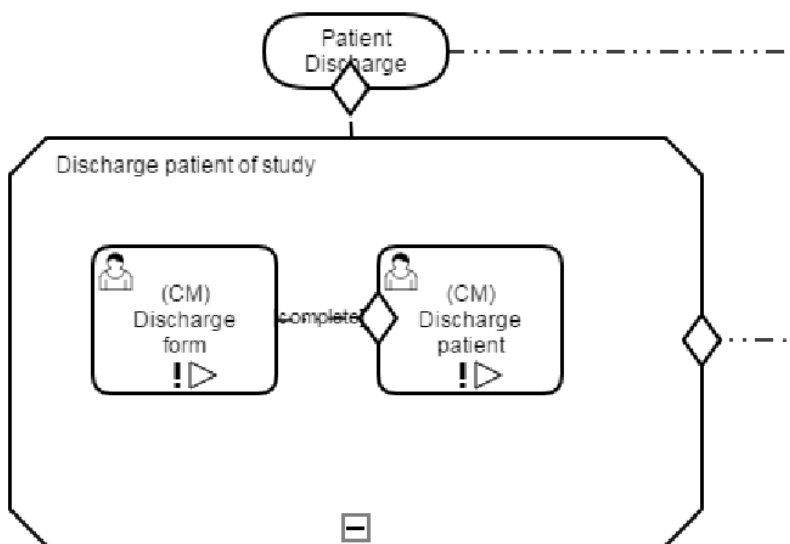


Responsible
Patient (older adult)
CONNECARE Subsystem
SMS
Comments
Automated records taken from mobile device.

2.4.3. After intense monitoring (30 days)

Name
Work plan execution at 30 days
Description
Follow-up (information and monitoring) of physical activity and sleep monitoring.
Responsible
Patient (older adult)
CONNECARE Subsystem
SMS
Comments
Automated records taken from mobile device.

2.5 Discharge



3. Data Collection

3.1. Case Identification

Technological test (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
tech1	Case identification – Technological Test	Technological Test	radio	Do you or your caregiver have an internet connection?	0, No 1, Yes
Tech2	Case identification – Technological Test	Technological Test	checkbox	Do you use:	1, smartphone (not only to call). 2, Tablet. 3, personal computer 0, none of the above
Tech3	Case identification – Technological Test	Technological Test	checkbox	Does your primary caregiver use:	1, smartphone (not only to call). 2, Tablet. 3, personal computer 0, none of the above
Tech4	Case identification – Technological Test	Technological Test	calc	Technological test result	Sum ([tech1],[tech2],[tech3]) == 0 , No Apte Sum ([tech1],[tech2],[tech3]) >0 , Apte

Technological test (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
tech1	Case identification – Technological Test	Technological Test	radio	Heeft u een internetverbinding?	0, Nee 1, Ja
Tech2	Case identification – Technological Test	Technological Test	checkbox	Gebruikt u:	1, een smartphone (meer dan alleen bellen). 2, een tablet.



						3, een computer 0, geen van bovenstaande
Tech3	Case identification – Technological Test	Technological Test	checkbox	Gebruikt uw zorgverlener:		1, een smartphone (meer dan alleen bellen). 2, een tablet. 3, een computer 0, geen van bovenstaande
Tech4	Case identification – Technological Test	Technological Test	calc	Technological test result		Sum ([tech1],[tech2],[tech3]) == 0 , No Apte Sum ([tech1],[tech2],[tech3]) >0 , Apte

ASA Physical Status Classification System (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ASA1	Case identification – ASA	ASA Physical Status Classification System	radio	ASA PS Classification	1, ASA I: A normal healthy patient 2, ASA II: A patient with mild systemic disease 3, ASA III: A patient with severe systemic disease 4, ASA IV: A patient with severe systemic disease that is a constant threat to life 5, ASA V: A moribund patient who is not expected to survive without the operation 6, ASA VI: A declared brain-dead patient whose organs are being removed for donor purposes



ASA Physical Status Classification System (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ASA1	Case identification – ASA	ASA Physical Status Classification System	radio	ASA Classification PS	1, ASA I: patiënt zonder lichamelijke of psychische aandoeningen behalve waarvoor zij geopereerd wordt 2, ASA II: patiënt met gering systemische aandoening zonder functionele beperkingen 3, ASA III: patiënt met ernstige invaliderende systemische aandoening 4, ASA IV: patiënt met ernstige systemische aandoening die levensbedreigend is 5, ASA V: stervende patiënt, van wie verwacht kan worden dat deze binnen 24 uur met of zonder operatie zal overlijden

Patient consent (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
pConsent1	Case identification – Patient's Consent	Patient's Consent	radio	Do you agree to participate into the process described in the document?	0, No 1, Yes

Patient consent (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
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pConsent1	Case identification – Patient's Consent	Patient's Consent	radio	Geeft u toestemming tot deelname aan de beschreven studie?	0, Nee 1, Ja
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3.2. Case Evaluation

Charlson Comorbidity Index (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ch1	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Myocardial infarct	0, No 1, Yes
ch2	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Congestive heart failure	0, No 1, Yes
ch3	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Peripheral vascular disease	0, No 1, Yes
ch4	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Cerebrovascular disease (except hemiplegia)	0, No 1, Yes
ch5	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Dementia	0, No 1, Yes
ch6	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Chronic pulmonary disease	0, No 1, Yes
ch7	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Connective tissue disease	0, No 1, Yes
ch8	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Ulcer disease	0, No 1, Yes
ch9	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Mild liver disease	0, No 1, Yes
ch10	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Diabetes (without complications)	0, No 1, Yes
ch11	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Diabetes with end organ damage	0, No 1, Yes



ch12	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Hemiplegia	0, No 1, Yes
ch13	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Moderate or severe renal disease	0, No 1, Yes
ch14	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Solid tumor (non metastatic)	0, No 1, Yes
ch15	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Leukemia	0, No 1, Yes
ch16	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Lymphoma, Multiple myeloma	0, No 1, Yes
ch17	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Moderate or severe liver disease	0, No 1, Yes
ch18	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Metastatic solid tumor	0, No 1, Yes
ch19	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	AIDS	0, No 1, Yes
ch20	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 50-59	0, No 1, Yes
ch21	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 60-69	0, No 1, Yes
ch22	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 70-79	0, No 1, Yes
ch23	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 80-89	0, No 1, Yes
ch24	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Age 90-99	0, No 1, Yes
ch25	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	calc	Charlson Comorbidity Index	sum([ch1]*1, [ch2]*1, [ch3]*1, [ch4]*1, [ch5]*1, [ch6]*1, [ch7]*1, [ch8]*1, [ch9]*1, [ch10]*1, [ch11]*2, [ch12]*2, [ch13]*2, [ch14]*2, [ch15]*2, [ch16]*2, [ch17]*3, [ch18]*6, [ch19]*6, [ch20]*1, [ch21]*2,



					[ch22]*3, [ch24]*5)	[ch23]*4,
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Charlson Comorbidity Index (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ch1	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Acuut myocardinfarct	0, Nee 1, Ja
ch2	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Hartfalen	0, Nee 1, Ja
ch3	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Perifere vaatziekte	0, Nee 1, Ja
ch4	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Cerebrovasculair accident	0, Nee 1, Ja
ch5	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Dementie	0, Nee 1, Ja
ch6	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Pulmonale aandoeningen	0, Nee 1, Ja
ch7	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Bindweefselaandoening	0, Nee 1, Ja
ch8	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Maagzweer	0, Nee 1, Ja
ch9	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Leveraandoening	0, Nee 1, Ja
ch10	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Diabetes	0, Nee 1, Ja
ch11	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Diabetescomplicaties	0, Nee 1, Ja
ch12	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Paraplegie	0, Nee 1, Ja
ch13	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Nieraandoening	0, Nee 1, Ja



ch14	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Kanker	0, Nee 1, Ja
ch15	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Leukemia	0, Nee 1, Ja
ch16	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Lymphoma, Multiple myeloma	0, Nee 1, Ja
ch17	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Ernstige leveraandoening	0, Nee 1, Ja
ch18	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Metastasen	0, Nee 1, Ja
ch19	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	HIV	0, Nee 1, Ja
ch20	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Leeftijd 50-59	0, Nee 1, Ja
ch21	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Leeftijd 60-69	0, Nee 1, Ja
ch22	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Leeftijd 70-79	0, Nee 1, Ja
ch23	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Leeftijd 80-89	0, Nee 1, Ja
ch24	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	radio	Leeftijd 90-99	0, Nee 1, Ja
ch25	Case evaluation – Comorbidity - Charlson	Charlson Comorbidity Index	calc	Charlson Comorbidity Index	sum([ch1]*1, [ch2]*1, [ch3]*1, [ch4]*1, [ch5]*1, [ch6]*1, [ch7]*1, [ch8]*1, [ch9]*1, [ch10]*1, [ch11]*2, [ch12]*2, [ch13]*2, [ch14]*2, [ch15]*2, [ch16]*2, [ch17]*3, [ch18]*6, [ch19]*6, [ch20]*1, [ch21]*2, [ch22]*3, [ch23]*4, [ch24]*5)



Groningen Frailty Indicator (GFI) (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
GFI_1		GFI	radio	Are you able to perform the described task without the help of others? ; Doing groceries	0 No 1 Yes
GFI_2		GFI	radio	Are you able to perform the described task without the help of others? Walk around the house, going to the neighbours	0 No 1 Yes
GFI_3		GFI	radio	Are you able to perform the described task without the help of others? Dressing and undressing	0 No 1 Yes
GFI_4		GFI	radio	Are you able to perform the described task without the help of others? Going to the toilet	0 No 1 Yes
GFI_5		GFI	radio	Are you having any troubles with bad sight?	0 No 1 Yes
GFI_6		GFI	radio	Are you having any troubles with hearing?	0 No 1 Yes
GFI_7		GFI	radio	Did u loose a lot (6kg) of weight the last 6 months unintended? (or 3kg a month)	0 No 1 Yes
GFI_8		GFI	radio	Do u use 4 or more different kinds of medicines at the moment?	0 No 1 Yes
GFI_9		GFI	radio	Do you have complaints about your memory? (or dementia)?	0 No 1 Yes 2 Sometimes
GFI_10		GFI	radio	Do you experience emptiness around u?	0 No 1 Yes 2 Sometimes
GFI_11		GFI	radio	Do you miss people around u?	0 No 1 Yes 2 Sometimes
GFI_12		GFI	radio	Do you feel abandoned?	0 No 1 Yes 2 Sometimes
GFI_13		GFI	radio	Have u felt depressed or sad recently?	0 No 1 Yes 2 Sometimes



GFI_14		GFI	radio	Have u felt nervous or anxious recently?	0 No 1 Yes 2 Sometimes
GFI_15		GFI	radio	Which mark do you give your physical fitness? (0-10, 0 is very low, 10 is very good)	Range: 1 - 10
			calc		

Groningen Frailty Indicator (GFI) (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
GFI_1		GFI	radio	Kan u onderstaande taak zelfstandig uitvoeren zonder hulp van anderen? ; Boodschappen doen	0 Nee 1 Ja
GFI_2		GFI	radio	Kan u onderstaande taak zelfstandig uitvoeren zonder hulp van anderen? Buitenshuis rondlopen (rondom huis of naar de bureu)	0 Nee 1 Ja
GFI_3		GFI	radio	Kan u onderstaande taak zelfstandig uitvoeren zonder hulp van anderen? Aan- en uitkleden	0 Nee 1 Ja
GFI_4		GFI	radio	Kan u onderstaande taak zelfstandig uitvoeren zonder hulp van anderen? Toiletbezoek	0 Nee 1 Ja
GFI_5		GFI	radio	Ondervindt u problemen in dagelijks leven door slecht zien?	0 Nee 1 Ja
GFI_6		GFI	radio	Ondervindt u problemen in dagelijks leven door slecht horen?	0 Nee 1 Ja
GFI_7		GFI	radio	Bent u de afgelopen 6 maanden veel (6kg) afgevallen zonder dit zelf te willen? (of 3kg in een maand)	0 Nee 1 Ja
GFI_8		GFI	radio	Gebruikt u momenteel 4 of meer verschillende soorten medicijnen?	0 Nee 1 Ja
GFI_9		GFI	radio	Heeft u momenteel klachten over uw geheugen (of bekend met dementie)?	0 Nee 1 Ja 2 Soms



GFI_10		GFI	radio	Ervaart u wel eens een leegte om u heen?	0 Nee 1 Ja 2 Soms
GFI_11		GFI	radio	Mist u wel eens mensen om u heen?	0 Nee 1 Ja 2 Soms
GFI_12		GFI	radio	Voelt u zich in de steek gelaten?	0 Nee 1 Ja 2 Soms
GFI_13		GFI	radio	Heeft u zich de laatste tijd somber of neerslachtig gevoeld?	0 Nee 1 Ja 2 Soms
GFI_14		GFI	radio	Heeft u zich de laatste tijd nerveus of angstig gevoeld?	0 Nee 1 Ja 2 Soms
GFI_15		GFI	radio	Welk rapportcijfer geeft u zichzelf voor lichamelijke fitheid? (0-10, 0 is erg slecht, 10 is erg goed)	Range: 1 - 10
			calc		

Hospital Anxiety and Depression Scale (HADS) (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Had-A1	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I feel tense or 'wound up'	3, Most of the time 2, A lot of the time 1, From time to time, occasionally 0, Not at all
Had-D1	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I still enjoy the things I used to enjoy:	0, Definitely as much 1, Not quite so much 2, Only a little 3, Hardly at all
Had-A2	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I get a sort of frightened feeling as if something awful is about to happen:	3, Very definitely and quite badly 2, Yes, but not too badly



					1, A little, but it doesn't worry me 0, Not at all
Had-D2	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I can laugh and see the funny side of things:	0, As much as I always could 1, Not quite so much now 2, Definitely not so much now 3, Not at all
Had-A3	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	Worrying thoughts go through my mind:	3, A great deal of the time 2, A lot of the time 1, From time to time, but not too often 0, Only occasionally
Had-D3	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I feel cheerful:	3, Not at all 2, Not often 1, Sometimes 0, Most of the time
Had-A4	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I can sit at ease and feel relaxed:	0, Definitely 1, Usually 2, Not Often 3, Not at all
Had-D4	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I feel as if I am slowed down:	3, Nearly all the time 2, Very often 1, Sometimes 0, Not at all
Had-A5	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I get a sort of frightened feeling like 'butterflies' in the stomach:	0, Not at all 1, Occasionally



					2, Quite Often 3, Very Often
Had-D5	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I have lost interest in my appearance:	3, Definitely 2, I don't take as much care as I should 1, I may not take quite as much care 0, I take just as much care as ever
Had-A6	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I feel restless as I have to be on the move:	3, Very much indeed 2, Quite a lot 1, Not very much 0, Not at all
Had-D6	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I look forward with enjoyment to things:	0, As much as I ever did 1, Rather less than I used to 2, Definitely less than I used to 3, Hardly at all
Had-A7	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I get sudden feelings of panic	3, Very often indeed 2, Quite often 1, Not very often 0, Not at all
Had-D7	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	radio	I can enjoy a good book or radio or TV program:	0, Often 1, Sometimes 2, Not often 3, Very seldom
Had-A8	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Anxiety Score	Sum(Had-A1,Had-A2,Had-A3,Had-



					A4,Had-A5,Had-A6,Had-A7)
Had-D8	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Depression Score	Sum(Had-D1,Had-D2,Had-D3,Had-D4,Had-D5,Had-D6,Had-D7)
Had-A9	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Anxiety Result	Normal, Had-A8 <8 Borderline abnormal (borderline case), 7 < Had-A8 < 11 Abnormal (case), Had-A8 >10
Had-D9	Case Evaluation – Hospital Anxiety and Depression Scale	Hospital Anxiety and Depression Scale	calc	Depression Result	Normal, Had-A9 <8 Borderline abnormal (borderline case), 7 < Had-A9 < 11 Abnormal (case), Had-A9 >10

Hospital Anxiety and Depression Scale (HADS) (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Had-A1		Hospital Anxiety and Depression Scale	radio	Ik voel me gespannen	3, Meestal 2, Vaak 1, Af en toe, soms 0, Helemaal niet
Had-D1		Hospital Anxiety and Depression Scale	radio	Ik geniet nog steeds van de dingen waar ik vroeger van genoot	0, Zeker zo veel 1, Niet zo veel als vroeger 2, Weinig 3, Haast helemaal niet



Had-A2		Hospital Anxiety and Depression Scale	radio	Ik krijg een soort angstgevoel alsof er elk moment iets vreselijks zal gebeuren	3, Heel zeker en vrij erg 2, Ja, maar niet zo erg 1, Een beetje, maar ik maak me er geen zorgen over 0, Helemaal niet
Had-D2		Hospital Anxiety and Depression Scale	radio	Ik kan lachen en de dingen van de vrolijke kant zien	0, Net zoveel als vroeger 1, Niet zo goed als vroeger 2, Beslist niet zoveel als vroeger 3, Helemaal niet
Had-A3		Hospital Anxiety and Depression Scale	radio	Ik maak me vaak ongerust	3, Heel erg vaak 2, Vaak 1, Af en toe maar niet te vaak 0, Alleen soms
Had-D3		Hospital Anxiety and Depression Scale	radio	Ik voel me opgewekt	3, Helemaal niet 2, Niet vaak 1, Soms 0, Meestal
Had-A4		Hospital Anxiety and Depression Scale	radio	Ik kan rustig zitten en me ontspannen	0, Zeker 1, Meestal 2, Niet vaak 3, Helemaal niet
Had-D4		Hospital Anxiety and Depression Scale	radio	Ik voel me alsof alles moeizamer gaat	3, Bijna altijd 2, Heel vaak 1, Soms



					0, Helemaal niet
Had-A5		Hospital Anxiety and Depression Scale	radio	Ik krijg een soort benauwd, gespannen gevoel in mijn maag	0, Helemaal niet 1, Soms 2, Vrij vaak 3, Heel vaak
Had-D5		Hospital Anxiety and Depression Scale	radio	Ik heb geen interesse meer in mijn uiterlijk	3, Zeker 2, Niet meer zoveel als ik zou moeten 1, Waarschijnlijk niet zoveel 0, Evenveel interesse als vroeger
Had-A6		Hospital Anxiety and Depression Scale	radio	Ik voel me rusteloos en voel dat ik iets te doen moet hebben	3, Heel erg 2, Tamelijk veel 1, Niet erg veel 0, Helemaal niet
Had-D6		Hospital Anxiety and Depression Scale	radio	Ik verheug me van te voren al op dingen	0, Net zoveel als vroeger 1, een beetje minder dan vroeger 2, Zeker minder dan vroeger 3, Bijna nooit
Had-A7		Hospital Anxiety and Depression Scale	radio	Ik krijg plotseling gevoelens van panische angst	3, Zeer vaak 2, Tamelijk vaak 1, Niet erg vaak 0, Helemaal niet
Had-D7		Hospital Anxiety and Depression Scale	radio	Ik kan van een goed boek genieten, of van een radio- of televisieprogramma	0, Vaak 1, Soms 2, Niet vaak



					3, Heel zelden
Had-A8		Hospital Anxiety and Depression Scale	calc	Anxiety Score	Sum(Had-A1,Had-A2,Had-A3,Had-A4,Had-A5,Had-A6,Had-A7)
Had-D8		Hospital Anxiety and Depression Scale	calc	Depression Score	Sum(Had-D1,Had-D2,Had-D3,Had-D4,Had-D5,Had-D6,Had-D7)
Had-A9		Hospital Anxiety and Depression Scale	calc	Anxiety Result	Normaal, Had-A8 <8 Borderline abnormaal (borderline case), 7 < Had-A8 < 11 Abnormaal (case), Had-A8 >10
Had-D9		Hospital Anxiety and Depression Scale	calc	Depression Result	Normaal, Had-A9 <8 Borderline abnormaal (borderline case), 7 < Had-A9 < 11 Abnormaal (case), Had-A9 >10

Activities of Daily Living (ADL) (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ADL_1	Case Evaluation – ADL	ADL	radio	Bathing	0 Does not need help 1 Needs help with 1 body part 2 Needs help with more than 1 body part
ADL_2	Case Evaluation – ADL	ADL	radio	Dressing:	0 Does the dressing withouts help, also buttons shirt and ties shoe laces 1 Picks clothes independently



					2 Needs help to button shirt and to tie shoe laces
ADL_3	Case Evaluation – ADL	ADL	radio	Toilet use:	0 Uses the toilet without help 1 Needs help with toilet use 2 Does not go to the toilet, uses cathether etc.
ADL_4	Case Evaluation – ADL	ADL	radio	Transfer:	0 Transfers from the bed and back without any help 1 Transfers from the bed and back with help 2 Does not leave the bed
ADL_5	Case Evaluation – ADL	ADL	radio	Bladder and bowel	0 continent 1 occasional accident 2 incontinent (or needs to be given enemas)
ADL_6	Case Evaluation – ADL	ADL	radio	Feeding:	0 independent 1 needs help cutting, spreading butter, etc., or requires modified diet 2 needs help with eating, or receives enteral feeding
			Calc		Range 0 - 12

Activities of Daily Living (ADL) (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ADL_1	Case Evaluation – ADL	ADL	radio	Baden / Wassen	0 Geen hulp nodig 1 Heeft hulp nodig voor een gedeelte van het lichaam 2 Heeft hulp nodig voor meer dan 1 deel van het lichaam
ADL_2	Case Evaluation – ADL	ADL	radio	Aankleden:	0 Pakt zelfstandig kleren uit de kast of lade, inclusief ondergoed,



					<p>bovenkleden en is zelfredzaam met ritsen, knopen, bretels en hulpmiddelen</p> <p>1 Pakt kleding zelf en kleedt zich volledig zelfstandig aan</p> <p>2 Pakt kleding zelf en kleedt zich aan zonder hulp behalve hulp voor strikken van schoenveters, heeft hulp nodig voor het pakken van kleding of met aankleden of blijft deels ongekleed.</p>
ADL_3	Case Evaluation – ADL	ADL	radio	Toiletgang:	<p>0 Gaat zelf naar toilet, maakt zichzelf schoon en herschikt kleren zonder hulp</p> <p>1 Krijgt hulp bij naar het toilet gaan, of bij het schoonmaken of bij het herschikken van de kleding of bij het gebruik van een po</p> <p>2 Gaat niet naar de toiletruimte</p>
ADL_4	Case Evaluation – ADL	ADL	radio	Transfer:	<p>0 Gaat zelfstandig in en uit bed, en in en uit een stoel (mag loophulp gebruiken)</p> <p>1 Gaat in en uit bed/stoel met hulp</p> <p>2 Komt niet uit bed</p>
ADL_5	Case Evaluation – ADL	ADL	radio	Continentie: defaecatie	<p>0 Volledige controle over mictie en</p> <p>1 Heeft soms een ongelukje</p> <p>2 Heeft toezicht nodig bij controle over mictie en defaecatie, gebruikt catheter of is incontinent</p>
ADL_6	Case Evaluation – ADL	ADL	radio	Voeding:	<p>0 Eet zelfstandig zonder hulp</p>



					1 Eet zelfstandig maar krijgt hulp bij snijden van vlees of smeren van brood 2 Krijgt hulp bij eten of wordt gevoed via sonde of infuus
			Calc		Range 0 - 12

Instrumental Activities of Daily Living (iADL) (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
IADL_1	Case Evaluation – iADL	IADL	radio	Telephoning	1 Uses the telephone, dials the numbers without help 1 Only calls some known numbers 1 Answers the phone, but does not call 0 Does not use the telephone
IADL_2	Case Evaluation – iADL	IADL	radio	Shopping/Doing groceries	1 Does all groceries independtdely 0 Does some groceries independently 0 Needs help with doing groceries 0 Is not able to do groceries
IADL_3	Case Evaluation – iADL	IADL	radio	Cooking	1 Is able to cook and serve dinner 0 Cooks dinner, but ingredients are delivered 0 Heatens meals, but diet is insufficient 0 Needs pre-cooked meals
IADL_4	Case Evaluation – iADL	IADL	radio	Housekeeping	1 Runs the household without help



					<p>1 Does light tasks in the household independent</p> <p>1 Does light tasks independent, but is not able to maintain the household</p> <p>1 Needs help with all housekeeping</p> <p>0 Does not maintain the household</p>
IADL_5	Case Evaluation – iADL	IADL	radio	Laundry	<p>1 Does all laundry</p> <p>1 Does only little laundry (socks etc.)</p> <p>0 All laundry is done by others</p>
IADL_6	Case Evaluation – iADL	IADL	radio	Transport	<p>1 Travels by car or public transport without help</p> <p>1 Organizes taxi but does not travel with public transport</p> <p>1 Needs help with public transport</p> <p>0 Travels by taxi, by car with help, or does not travel</p>
IADL_7	Case Evaluation – iADL	IADL	radio	Responsibility for medication	<p>1 Takes medication according to prescription</p> <p>0 Takes medication if prepared by someone</p> <p>0 Is not able to bear responsibility for medication</p>
IADL_8	Case Evaluation – iADL	IADL	radio	Finances	<p>1 Is able to handle own finances</p> <p>1 Needs help with finances</p> <p>0 Is not able to deal with money</p>
			Calc		Range 0 - 8



Instrumental Activities of Daily Living (iADL) (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
IADL_1	Case Evaluation – iADL	IADL	radio	Telefoneren	<p>1 Telefooneert zelfstandig, zoekt zelf nummers en drukt zelfstandig</p> <p>1 Belt alleen een aantal goede bekende nummers</p> <p>1 Beantwoordt de telefoon maar belt zelf niet</p> <p>0 Gebruikt de telefoon niet</p>
IADL_2	Case Evaluation – iADL	IADL	radio	Winkelen/Boodschappen doen	<p>1 Doet alle boodschappen zelfstandig</p> <p>0 Doet alleen enkele boodschappen zelfstandig</p> <p>0 Heeft hulp nodig bij boodschappen doen</p> <p>0 Kan geen boodschappen doen</p>
IADL_3	Case Evaluation – iADL	IADL	radio	Koken	<p>1 Kan zelfstandig volwaardige maaltijd plannen, klaarmaken en serveren</p> <p>0 Kookt volwaardige maaltijd indien ingrediënten worden aangeleverd</p> <p>0 Verwarmt en bereidt maaltijden maar dieet is ontoereikend</p> <p>0 Heeft kant-en-klare maaltijden nodig</p>
IADL_4	Case Evaluation – iADL	IADL	radio	Huishouden	<p>1 Doet het huishouden zelfstandig of heeft alleen hulp voor zware huishoudelijke klussen</p>



					<p>1 Doet licht huishoudelijk werk zoals de afwas, bed opmaken zelf</p> <p>1 Doet licht huishoudelijk werk maar is niet in staat het huis netjes te houden</p> <p>1 Heeft hulp nodig bij alle huishoudelijke taken</p> <p>0 Doet niets in de huishouding</p>
IADL_5	Case Evaluation – iADL	IADL	radio	Was	<p>1 Doet eigen was</p> <p>1 Doet alleen kleine wasjes (sokken etc.)</p> <p>0 Alle was wordt door anderen gedaan</p>
IADL_6	Case Evaluation – iADL	IADL	radio	Vervoer	<p>1 Reist zelfstandig met openbaar vervoer of eigen auto</p> <p>1 Regelt zelf taxi maar reist niet met het openbaar vervoer</p> <p>1 Heeft hulp nodig om met openbaar vervoer te reizen</p> <p>0 Reist in taxi of auto met hulp/ reist nooit</p>
IADL_7	Case Evaluation – iADL	IADL	radio	Verantwoordelijkheid voor medicatie	<p>1 Neemt medicatie zelfstandig in volgens voorschrift</p> <p>0 Neemt medicatie in indien deze klaargezet is door iemand anders</p> <p>0 Kan niet voor eigen medicatie zorgen</p>
IADL_8	Case Evaluation – iADL	IADL	radio	Financiën	<p>1 Regelt financiën zelfstandig en heeft besef van inkomsten en uitgaven</p>



					1 Kan met kleine bedragen omgaan maar heeft hulp nodig bij bankzaken 0 Kan niet met geld omgaan
			Calc		Range 0 - 8

EORTC QLQ C-30 (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
QLQ-C30_1	Case Evaluation – Quality of Life	EORTC QLQ-C30	radio	Do you have any trouble doing strenuous activities, like carrying a heavy shopping bag or a suitcase?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_2	Case Evaluation – Quality of Life	EORTC QLQ-C30	radio	Do you have any trouble taking a long walk?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_3	Case Evaluation – Quality of Life	EORTC QLQ-C30	radio	Do you have any trouble taking a short walk outside of the house?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_4	Case Evaluation – Quality of Life	EORTC QLQ-C30	radio	Do you need to stay in bed or a chair during the day?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_5	Case Evaluation – Quality of Life	EORTC QLQ-C30	radio	Do you need help with eating, dressing, washing yourself or using the toilet?	1, Not at all 2, A little 3, Quite a bit 4, Very much



QLQ-C30_6	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Were you limited in doing either your work or other daily activities?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_7	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Were you limited in pursuing your hobbies or other leisure time activities?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_8	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Were you short of breath?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_9	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Have you had pain?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_10	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Did you need to rest?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_11	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Have you had trouble sleeping?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_12	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Have you felt weak?	1, Not at all 2, A little 3, Quite a bit 4, Very much



QLQ-C30_13	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Have you lacked appetite?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_14	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Have you felt nauseated?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_15	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Have you vomited?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_16	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Have you been constipated?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_17	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Have you had diarrhea?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_18	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Were you tired?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_19	Case Evaluation - Quality of Life	EORTC C30	QLQ-radio	Did pain interfere with your daily activities?	1, Not at all 2, A little 3, Quite a bit 4, Very much



QLQ-C30_20	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Have you had difficulty in concentrating on things, like reading a newspaper or watching television?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_21	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Did you feel tense?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_22	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Did you worry?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_23	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Did you feel irritable?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_24	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Did you feel depressed?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_25	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Have you had difficulty remembering things?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_26	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Has your physical condition or medical treatment interfered with your family life?	1, Not at all 2, A little 3, Quite a bit 4, Very much



QLQ-C30_27	Case Evaluation - Quality of Life	EORTC C30	QLQ-	radio	Has your physical condition or medical treatment interfered with your social activities?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_28	Case Evaluation - Quality of Life	EORTC C30	QLQ-	radio	Has your physical condition or medical treatment caused you financial difficulties?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-C30_29	Case Evaluation - Quality of Life	EORTC C30	QLQ-	radio	How would you rate your overall health during the past week? (1 – very poor, 7 - excellent)	Range: 1 - 7
QLQ-C30_30	Case Evaluation - Quality of Life	EORTC C30	QLQ-	radio	How would you rate your overall quality of life during the past week? (1 – very poor, 7 - excellent)	Range: 1 - 7

EORTC QLQ C-30 (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
QLQ-C30_1	Case Evaluation - Quality of Life	EORTC C30	radio	Heeft u moeite met het doen van inspannende activiteiten zoals het dragen van een zware boodschappentas of koffer?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_2	Case Evaluation - Quality of Life	EORTC C30	radio	Heeft u moeite met het maken van een lange wandeling?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_3	Case Evaluation - Quality of Life	EORTC C30	radio	Heeft u moeite met het maken van een korte wandeling buitenshuis?	1, Helemaal niet 2, Een beetje



							3, Nogal 4, Heel erg
QLQ-C30_4	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Moet u overdag in bed of op een stoel blijven?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_5	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Heeft u hulp nodig met eten, aankleden, uzelf wassen of naar het toilet gaan?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_6	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Was u beperkt bij het doen van uw werk of andere dagelijkse bezigheden?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_7	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Was u beperkt in het uitoefenen van uw hobby's of bij andere bezigheden die u in uw vrije tijd doet?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_8	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Was u kortademig?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_9	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Heeft u pijn gehad?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_10	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Had u behoefte om te rusten		1, Helemaal niet 2, Een beetje 3, Nogal



							4, Heel erg
QLQ-C30_11	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Heeft u moeite met slapen gehad?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_12	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Heeft u zich slap gevoeld?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_13	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Heeft u gebrek aan eetlust gehad?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_14	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Heeft u zich misselijk gevoeld?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_15	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Heeft u overgegeven?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_16	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Had u last van obstipatie (was u verstopt?)		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_17	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Had u diarree?		1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg



QLQ-C30_18	Case Evaluation – Quality of Life	EORTC C30	QLQ-radio	Was u moe?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_19	Case Evaluation – Quality of Life	EORTC C30	QLQ-radio	Heeft pijn u gehinderd in uw dagelijkse bezigheden?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_20	Case Evaluation – Quality of Life	EORTC C30	QLQ-radio	Heeft u moeite gehad met het concentreren op dingen, zoals een krant lezen of televisie kijken?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_21	Case Evaluation – Quality of Life	EORTC C30	QLQ-radio	Voelde u zich gespannen?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_22	Case Evaluation – Quality of Life	EORTC C30	QLQ-radio	Maakte u zich zorgen?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_23	Case Evaluation – Quality of Life	EORTC C30	QLQ-radio	Voelde u zich prikkelbaar?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_24	Case Evaluation – Quality of Life	EORTC C30	QLQ-radio	Voelde u zich neerslachtig?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg



QLQ-C30_25	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Heeft u moeite gehad met het herinneren van dingen?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_26	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Heeft uw lichamelijke toestand of medische behandeling uw familielevens in de weg gestaan?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_27	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Heeft uw lichamelijke toestand of medische behandeling u belemmerd in uw sociale bezigheden?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_28	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Heeft uw lichamelijke toestand of medische behandeling financiële moeilijkheden met zich meegebracht?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-C30_29	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Hoe zou u uw algehele gezondheid gedurende de afgelopen week beoordelen? (1 – erg slecht, 7 - uitstekend)	Range: 1 - 7
QLQ-C30_30	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Hoe zou u uw algehele kwaliteit van het leven gedurende de afgelopen week beoordelen? (1 – erg slecht, 7 - uitstekend)	Range: 1 - 7



EORTC QLQ ELD14 (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
QLQ-ELD14_31	Case Evaluation – Quality of Life	EORTC QLQ-ELD14	radio	Have you had difficulty with steps or stairs?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-ELD14_32	Case Evaluation – Quality of Life	EORTC QLQ-ELD14	radio	Have you had trouble with your joints (e.g. stiffness, pain)?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-ELD14_33	Case Evaluation – Quality of Life	EORTC QLQ-ELD14	radio	Did you feel unsteady on your feet?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-ELD14_34	Case Evaluation – Quality of Life	EORTC QLQ-ELD14	radio	Did you need help with household chores such as cleaning or shopping?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-ELD14_35	Case Evaluation – Quality of Life	EORTC QLQ-ELD14	radio	Have you felt able to talk to your family about your illness?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ-ELD14_36	Case Evaluation – Quality of Life	EORTC QLQ-ELD14	radio	Have you worried about your family coping with your illness and treatment?	1, Not at all 2, A little 3, Quite a bit 4, Very much



QLQ- ELD14_37	Case Evaluation – Quality of Life	EORTC ELD14	QLQ- radio	Have you worried about the future of people who are important to you?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ- ELD14_38	Case Evaluation – Quality of Life	EORTC ELD14	QLQ- radio	Were you worried about your future health?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ- ELD14_39	Case Evaluation – Quality of Life	EORTC C30	QLQ- radio	Did you feel uncertain about the future?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ- ELD14_40	Case Evaluation – Quality of Life	EORTC ELD14	QLQ- radio	Have you worried about what might happen towards the end of your life?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ- ELD14_41	Case Evaluation – Quality of Life	EORTC ELD14	QLQ- radio	Have you had a positive outlook on life in the last week?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ- ELD14_42	Case Evaluation – Quality of Life	EORTC ELD14	QLQ- radio	Have you felt motivated to continue with your normal hobbies and activities?	1, Not at all 2, A little 3, Quite a bit 4, Very much
QLQ- ELD14_43	Case Evaluation – Quality of Life	EORTC ELD14	QLQ- radio	How much has your illness been a burden to you?	1, Not at all 2, A little 3, Quite a bit 4, Very much



QLQ- ELD14_44	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	How much has your treatment been a burden to you?	1, Not at all 2, A little 3, Quite a bit 4, Very much
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EORTC QLQ ELD14 (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
QLQ- ELD14_31	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	Heeft u moeilijkheden gehad met treden of trappen? 1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ- ELD14_32	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	Heeft u problemen gehad met uw gewrichten ? (b.v. stijfheid, pijn?) 1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ- ELD14_33	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	Voelde u zich onvast op uw benen staan? 1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ- ELD14_34	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	Had u hulp nodig bij huishoudelijke klusjes zoals schoonmaken of boodschappen doen? 1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ- ELD14_35	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	Heeft u zich in staat gevoeld om met uw familie over uw ziekte te praten? 1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg



QLQ- ELD14_36	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	Heeft u zich zorgen gemaakt over hoe uw familie met uw ziekte en behandeling omgaat?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ- ELD14_37	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	Heeft u zich zorgen gemaakt over de toekomst van mensen die belangrijk zijn voor u?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ- ELD14_38	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	Maakte u zich zorgen over uw gezondheid in de toekomst?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ- ELD14_39	Case Evaluation – Quality of Life	EORTC C30	QLQ-	radio	Voelde u zich onzeker over de toekomst?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ- ELD14_40	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	Heeft u zich zorgen gemaakt over wat er zou kunnen gebeuren naar het einde van uw leven toe?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ- ELD14_41	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	Heeft u in de afgelopen week een positieve kijk gehad op het leven?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ- ELD14_42	Case Evaluation – Quality of Life	EORTC ELD14	QLQ-	radio	Heeft u zich gemotiveerd gevoeld om uw normale hobby's en activiteiten voort te zetten?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg



QLQ-ELD14_43	Case Evaluation – Quality of Life	EORTC ELD14	QLQ- radio	In welke mate is uw ziekte een belasting voor uw geweest?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg
QLQ-ELD14_44	Case Evaluation – Quality of Life	EORTC ELD14	QLQ- radio	In welke mate is uw behandeling een belasting voor uw geweest?	1, Helemaal niet 2, Een beetje 3, Nogal 4, Heel erg

Mini Nutritional Assessment-Short Form (MNA-SF) (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
MNA-SF_A	Work-plan Definition – MNA-SF	MNA-SF	radio	Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?	0 Severe decrease food intake 1 Moderate decrease food intake 2 No decrease in food intake
MNA-SF_B	Work-plan Definition – MNA-SF	MNA-SF	radio	Weight loss during the last 3 months	0 Weight loss greater than 3 kg (6.6 lbs) 1 Does not know 2 Weight loss between 1 and 3 kg (2.2 and 6.6 lbs) 3 No weight loss
MNA-SF_C	Work-plan Definition – MNA-SF	MNA-SF	radio	Mobility	0 Bed or chair bound 1 Able to get out of bed / chair but does not go out 2 Goes out
MNA-SF_D	Work-plan Definition – MNA-SF	MNA-SF	radio	Has suffered psychological stress or acute disease in the past 3 months	0 Yes 2 No



MNA-SF_E	Work-plan Definition – MNA-SF	MNA-SF	radio	Neuropsychological problems	0 Severe dementia or depression 1 Mild dementia 2 No psychological problems
MNA-SF_weight	Work-plan Definition – MNA-SF	MNA-SF	open	Weight	In kg
MNA-SF_lenght	Work-plan Definition – MNA-SF	MNA-SF	open	Lenght	In cm
MNA-SF_F	Work-plan Definition – MNA-SF	MNA-SF	radio	BMI (weight in kg/height in m ²)	0 BMI less than 19 1 BMI 19 to less than 21 2 BMI 21 to less than 23 3 BMI 23 or greater
			Calc		Range 0 - 14

Mini Nutritional Assessment-Short Form (MNA-SF) (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
MNA-SF_A	Work-plan Definition – MNA-SF	MNA-SF	radio	Bent u de afgelopen 3 maanden minder gaan eten als gevolg van verminderde eetlust, spijsverteringsproblemen, problemen bij het kauwen en/of slikken?	0 Sterk verminderde eetlust 1 Matige verminderde eetlust 2 Geen verminderde eetlust
MNA-SF_B	Work-plan Definition – MNA-SF	MNA-SF	radio	Gewichtsverlies gedurende de afgelopen maanden	0 Gewichtsverlies groter dan 3 kg 1 Weet niet 2 Gewichtsverlies tussen 1 en 3 kg 3 Geen gewichtsverlies



MNA-SF_C	Work-plan Definition – MNA-SF	MNA-SF	radio	Mobiliteit	0 Aan bed of stoel gebonden 1 In staat zelfstandig uit bed/stoel te komen, maar gaat niet naar buiten 2 gaat zelfstandig naar buiten
MNA-SF_D	Work-plan Definition – MNA-SF	MNA-SF	radio	Heeft u gedurende de afgelopen 3 maanden last van psychische stress of een ernstige ziekte	0 Ja 2 Nee
MNA-SF_E	Work-plan Definition – MNA-SF	MNA-SF	radio	Neuropsychologische problemen	0 Ernstig dement of depressief 1 Licht dement 2 Geen psychologische problemen
MNA-SF_weight	Work-plan Definition – MNA-SF	MNA-SF	open	Weight	In kg
MNA-SF_lenght	Work-plan Definition – MNA-SF	MNA-SF	open	Lenght	In cm
MNA-SF_F	Work-plan Definition – MNA-SF	MNA-SF	radio	BMI (gewicht in kg/lengte in m ²)	0 BMI minder dan 19 1 BMI tussen 19 en 21 2 BMI tussen 21 en 23 3 BMI 23 of meer
			Calc		Range 0 - 14

Nutritional Risk Screening (NRS) (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
NRS-1	Work-plan Definition – MNA-SF	NRS	radio	Is BMI <20.5?	0 No 1 Yes



NRS-1	Work-plan Definition – NRS	NRS	radio	Has the patient lost weight within the last 3 months?	0 No 1 Yes
NRS-1	Work-plan Definition – NRS	NRS	radio	Has the patient had a reduced dietary intake in the last week	0 No 1 Yes
NRS-1	Work-plan Definition – NRS	NRS	radio	Is the patient severely ill?	0 No 1 Yes
	Work-plan Definition – NRS	NRS			Yes: If the answer is 'Yes' to any question of NRS-1, questions are performed from NRS-2
NRS-2	Work-plan Definition – NRS	NRS	radio	Impaired nutritional status	0 Absent 1 Wt loss > 5% in 3 mths or Food intake below 50–75% of normal requirement in preceding week 2 Wt loss > 5% in 2 mths or BMI 18.5–20.5 + impaired general condition or Food intake 25–60% of normal requirement in preceding week 3 Wt loss > 5% in 1 mth (> 15% in 3 mths) or BMI < 18.5 + impaired general condition or Food intake 0-25% of normal requirement in preceding week in preceding week.
NRS-2	Work-plan Definition – NRS	NRS	radio	Severity of disease	0 Absent 1 Hip fracture* Chronic patients, in particular with acute complications: cirrhosis*, COPD* 2 Major abdominal surgery* Stroke* 3 Head injury* Bone marrow



					transplantation*
NRS-2	Work-plan Definition – NRS	NRS	radio	Age	0 < 70 years 1 ≥ 70 years
			Calc		Score = Impaired nutritional status + Severity of disease + Age

Nutritional Risk Screening (NRS) (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
NRS-1	Work-plan Definition – MNA-SF	NRS	radio	Is BMI <20.5?	0 Nee 1 Ja
NRS-1	Work-plan Definition – NRS	NRS	radio	Gewichtsverlies gedurende de afgelopen 3 maanden?	0 Nee 1 Ja
NRS-1	Work-plan Definition – NRS	NRS	radio	Heeft de patient een verminderde intake gehad de afgelopen week?	0 Nee 1 Ja
NRS-1	Work-plan Definition – NRS	NRS	radio	Is de patient ernstig ziek?	0 Nee 1 Ja
	Work-plan Definition – NRS	NRS			Ja: als het antwoord op 1 van bovenstaande vragen “Ja” is, vervolgen met de vragen van NRS-2.
NRS-2	Work-plan Definition – NRS	NRS	radio	Verminderde voeding status	0 Absent 1 Gewichtsverlies >5% in 3 maanden of voedsel intake lager dan 50-75% van de behoefte in voorgaande week. 2 Gewichtsverlies >5% in 2 maanden of BMI 18.5-20.5 + ziekte of voedsel intake lager



					dan 25-60% van de behoefte in voorgaande week. 3 Gewichtsverlies >5% in 1 maand of BMI <18.5 + ziekte of voedsel intake lager dan 0-25% van de behoefte in voorgaande week.
NRS-2	Work-plan Definition – NRS	NRS	radio	Ernst van de ziekte	0 Absent 1 Heup fractuur* Chronische patienten, in het bijzonder met acute complicaties: cirrose*, COPD etc. 2 Grote abdominale chirurgie* Herseninfarct* 3 Hoofdletsel* Beenmerg transplantatie*
NRS-2	Work-plan Definition – NRS	NRS	radio	Leeftijd	0 < 70 years 1 ≥ 70 years
			Calc		Score = Verminderde voeding status + Ernst van de ziekte + Leeftijd

International Physical Activity Questionnaire (IPAQ) (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	radio	1a. Do you currently have a job or do any unpaid work outside your home?	0 Yes 1 No, (Go to Part 2)
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	Open / radio	1b. On how many days, the last 7 days, did you do vigorous physical activities like heavy lifting, digging, heavy construction, or climbing up stairs as part of your work? Think about only those	.. Days per week None, (Go to 1d.)



				activities that you did for at least 10 minutes at a time?	
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	open	1c. How much time did you usually spend on one of those days doing vigorous physical activities as part of your work?	... hours per day ... minutes per day
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	Open / radio	1d. Think about only those physical activities that you did for at least 10 minutes at a time. On how many days, during the last 7 days, did you do moderate physical activities like carrying light loads as part of your work? Do not include walking.	... Days per week None, (Go to 1f.)
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	open	1e. How much time did you usually spend on one of those days doing moderate physical activities as part of your work?	... hours per day ... minutes per day
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	Open / radio	1f. On how many days, during the last 7 days, did you walk for at least 10 minutes at a time as part of your work? Please do not count any walking you did to travel to or from work	... Days per week None, (Go to Part 2)
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	open	1g. How much time did you usually spend on one of those days walking as part of your work?	... hours per day ... minutes per day
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	radio	1h. If u did walking as part of your job, how fast did you walk?	1, Fast 2, Moderate 3, Slow
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	Open / radio	2a. Op hoeveel dagen, in de laatste zeven dagen, heeft u zich verplaatst met een motorvoertuig zoals de trein, de bus, de wagen of de tram?	... Days per week None, (Go to 2c.)



IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	open	2b. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan verplaatsingen met de wagen, de bus, de trein, of ene ander motorvoertuig?	... hours per day ... minutes per day
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	Open / radio	2c. Op hoeveel dagen, in de laatste zeven dagen, heeft u gefietst gedurende minstens 10 minuten aan één stuk om ergens heen te gaan?	... Days per week Geen, (Go to 2f.)
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	open	2d. Hoeveel tijd in totaal heeft u op zo'n dag gefietst om ergens heen te gaan?	... hours per day ... minutes per day
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	radio	2e. Als u zich verplaatst heeft per fiets, in welk tempo was dat dan meestal?	1, Fast 2, Moderate 3, Slow
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	Open / radio	2f. Op hoeveel dagen, in de laatste zeven dagen, heeft u gewandeld gedurende minstens 10 minuten aan één stuk om ergens heen te gaan?	... Days per week None, (Go to Part 3)
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	open	2g. Hoeveel tijd in totaal heeft u op zo'n dag gewandeld om ergens heen te gaan?	... hours per day ... minutes per day
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	radio	2h. Als u gewandeld heeft om ergens heen te gaan, in welk tempo was dat dan meestal?	1, Fast 2, Moderate 3, Slow
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	Open / radio	3a. Op hoeveel dagen, in de laatste zeven dagen, heeft u zware fysieke activiteiten gedaan zoals zwaar tilwerk, houthakken, sneeuwruimen of spitten in de tuin of moestuin?	... Days per week None, (Go to 3c.)
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	open	3b. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan zware	... hours per day ... minutes per day



				fysieke activiteiten in de tuin of moestuin?	
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	Open / radio	3c. Op hoeveel dagen, in de laatste zeven dagen, heeft u matige fysieke activiteiten gedaan zoals lichte lasten dragen, ruiten wassen, vegen of harken in de tuin of moestuin	... Days per week Geen, (ga naar 3e.)
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	open	3d. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan matige fysieke activiteiten in de tuin of moestuin?	... hours per day ... minutes per day
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	Open / radio	3e. Op hoeveel dagen, in de laatste zeven dagen, heeft u matige fysieke activiteiten gedaan zoals lichte lasten dragen, ruiten wassen, vloeren schrobben of vegen binnenshuis?	... Days per week Geen, (ga naar Deel 4)
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	open	3f. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan matige fysieke activiteiten binnenshuis?	... hours per day ... minutes per day
IPAQ_Recreation	Case Evaluation – Physical activity	IPAQ	Open / radio	4a. Zonder het wandelen dat u reedt vermeld hebt, op hoeveel dagen, in de laatste zeven dagen, heeft u gewandeld gedurende minstens 10 minuten aan één stuk in uw vrije tijd?	... Days per week Geen, (ga naar 4d.)
IPAQ_Recreation	Case Evaluation – Physical activity		open	4b. Hoeveel tijd in totaal heeft u op zo'n dag gewandeld in uw vrije tijd?	... hours per day ... minutes per day
IPAQ_Recreation	Case Evaluation – Physical activity		radio	4c. Als u gewandeld heeft in uw vrije tijd, in welk tempo was dat dan meestal?	1, Fast 2, Moderate 3, Slow
IPAQ_Recreation	Case Evaluation – Physical activity		Open / radio	4d. Op hoeveel dagen, in de laatste zeven dagen, heeft u zware fysieke activiteiten gedaan	... Days per week Geen, (ga naar 4f.)



				zoals bijvoorbeeld aerobics, lopen, snel fietsen, snel zwemmen of andere intense activiteiten in uw vrije tijd?	
IPAQ_Recreation	Case Evaluation – Physical activity		open	4e. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan zware fysieke activiteiten in uw vrije tijd?	... hours per day ... minutes per day
IPAQ_Recreation	Case Evaluation – Physical activity		Open / radio	4f. Op hoeveel dagen, in de laatste zeven dagen, heeft u matige fysieke activiteiten gedaan zoals bijvoorbeeld fietsen aan een middelmatig tempo, zwemmen, tennis dubbelspel of andere activiteiten aan een matige intensiteit in uw vrije tijd?	... Days per week Geen, (ga naar Deel 5)
IPAQ_Recreation	Case Evaluation – Physical activity		open	4g. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan matige fysieke activiteiten in uw vrije tijd?	... hours per day ... minutes per day
IPAQ_Sitting	Case Evaluation – Physical activity	IPAQ	open	5a. Hoeveel tijd heeft u gemiddeld gezeten op een weekdag, in de laatste zeven dagen?	... hours per day ... minutes per day
IPAQ_Sitting	Case Evaluation – Physical activity	IPAQ	open	5b. Hoeveel tijd heeft u gemiddeld gezeten op een weekenddag, in de laatste zeven dagen?	... hours per day ... minutes per day
			Calc		

International Physical Activity Questionnaire (IPAQ) (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	radio	1a. Hebt u momenteel een baan of doet u onbetaald werk buitenshuis?	0 Ja 1 Nee, (ga naar Deel 2)



IPAQ_Work	Case Evaluation – Physical activity	IPAQ	Open / radio	1b. Op hoeveel dagen, in de laatste zeven dagen, heeft u zware fysieke activiteiten gedaan zoals zwaar tilwerk, spitten, bouwwerken of trappen lopen, als deel van uw werk?	.. Dagen per week Geen, (ga naar 1d.)
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	open	1c. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan zware fysieke activiteiten als deel van uw werk?	... uur ... minuten / dag
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	Open / radio	1d. Op hoeveel dagen, in de laatste zeven dag, heeft u matige fysieke activiteiten gedaan zoals het dragen van lichte lasten als deel van uw werk?	... Dagen per week Geen, (ga naar 1f.)
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	open	1e. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan matige fysieke activiteiten als deel van uw werk?	... uur ... minuten / dag
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	Open / radio	1f. Op hoeveel dagen, in de laatste zeven dag, heeft u gewandeld gedurende minstens 10 minuten aan één stuk als deel van uw werk. Opgelet, de verplaatsing te voet van en naar het werk hoort hier niet bij!	... Dagen per week Geen, (ga naar Deel 2)
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	open	1g. Hoeveel tijd in totaal heeft u op zo'n dag gewandeld als deel van u werk?	... uur ... minuten / dag
IPAQ_Work	Case Evaluation – Physical activity	IPAQ	radio	1h. Indien u gewandeld heeft als deel van u werk, in welk tempo was dat dan meestal?	1, Hoog tempo 2, Middelmatige tempo 3, Laag tempo
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	Open / radio	2a. Op hoeveel dagen, in de laatste zeven dagen, heeft u zich verplaatst met een	... Dagen per week



				motorvoertuig zoals de trein, de bus, de wagen of de tram?	Geen, (ga naar 2c.)
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	open	2b. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan verplaatsingen met de wagen, de bus, de trein, of ene ander motorvoertuig?	... uur ... minuten / dag
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	Open / radio	2c. Op hoeveel dagen, in de laatste zeven dagen, heeft u gefietst gedurende minstens 10 minuten aan één stuk om ergens heen te gaan?	.. Dagen per week Geen, (ga naar 2f.)
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	open	2d. Hoeveel tijd in totaal heeft u op zo'n dag gefietst om ergens heen te gaan?	... uur ... minuten / dag
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	radio	2e. Als u zich verplaatst heeft per fiets, in welk tempo was dat dan meestal?	1, Hoog tempo 2, Middelmattige tempo 3, Laag tempo
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	Open / radio	2f. Op hoeveel dagen, in de laatste zeven dagen, heeft u gewandeld gedurende minstens 10 minuten aan één stuk om ergens heen te gaan?	.. Dagen per week Geen, (Deel 3)
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	open	2g. Hoeveel tijd in totaal heeft u op zo'n dag gewandeld om ergens heen te gaan?	... uur ... minuten / dag
IPAQ_Transport	Case Evaluation – Physical activity	IPAQ	radio	2h. Als u gewandeld heeft om ergens heen te gaan, in welk tempo was dat dan meestal?	1, Hoog tempo 2, Middelmattige tempo 3, Laag tempo
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	Open / radio	3a. Op hoeveel dagen, in de laatste zeven dagen, heeft u zware fysieke activiteiten gedaan zoals zwaar tilwerk, houthakken,	.. Dagen per week Geen, (ga naar 3c.)



				sneeuwruimen of spitten in de tuin of moestuin?	
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	open	3b. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan zware fysieke activiteiten in de tuin of moestuin?	... uur ... minuten / dag
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	Open / radio	3c. Op hoeveel dagen, in de laatste zeven dagen, heeft u matige fysieke activiteiten gedaan zoals lichte lasten dragen, ruiten wassen, vegen of harken in de tuin of moestuin	.. Dagen per week Geen, (ga naar 3e.)
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	open	3d. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan matige fysieke activiteiten in de tuin of moestuin?	... uur ... minuten / dag
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	Open / radio	3e. Op hoeveel dagen, in de laatste zeven dagen, heeft u matige fysieke activiteiten gedaan zoals lichte lasten dragen, ruiten wassen, vloeren schrobben of vegen binnenshuis?	.. Dagen per week Geen, (ga naar Deel 4)
IPAQ_Home	Case Evaluation – Physical activity	IPAQ	open	3f. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan matige fysieke activiteiten binnenshuis?	... uur ... minuten / dag
IPAQ_Recreation	Case Evaluation – Physical activity	IPAQ	Open / radio	4a. Zonder het wandelen dat u reedt vermeld hebt, op hoeveel dagen, in de laatste zeven dagen, heeft u gewandeld gedurende minstens 10 minuten aan één stuk in uw vrije tijd?	.. Dagen per week Geen, (ga naar 4d.)
IPAQ_Recreation	Case Evaluation – Physical activity		open	4b. Hoeveel tijd in totaal heeft u op zo'n dag gewandeld in uw vrije tijd?	... uur ... minuten / dag



IPAQ_Recreation	Case Evaluation – Physical activity		radio	4c. Als u gewandeld heeft in uw vrije tijd, in welk tempo was dat dan meestal?	1, Hoog tempo 2, Middelmatige tempo 3, Laag tempo
IPAQ_Recreation	Case Evaluation – Physical activity		Open / radio	4d. Op hoeveel dagen, in de laatste zeven dagen, heeft u zware fysieke activiteiten gedaan zoals bijvoorbeeld aerobics, lopen, snel fietsen, snel zwemmen of andere intense activiteiten in uw vrije tijd?	.. Dagen per week Geen, (ga naar 4f.)
IPAQ_Recreation	Case Evaluation – Physical activity		open	4e. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan zware fysieke activiteiten in uw vrije tijd?	... uur ... minuten / dag
IPAQ_Recreation	Case Evaluation – Physical activity		Open / radio	4f. Op hoeveel dagen, in de laatste zeven dagen, heeft u matige fysieke activiteiten gedaan zoals bijvoorbeeld fietsen aan een middelmatig tempo, zwemmen, tennis dubbelspel of andere activiteiten aan een matige intensiteit in uw vrije tijd?	.. Dagen per week Geen, (ga naar Deel 5)
IPAQ_Recreation	Case Evaluation – Physical activity		open	4g. Hoeveel tijd in totaal heeft u op zo'n dag besteedt aan matige fysieke activiteiten in uw vrije tijd?	... uur ... minuten / dag
IPAQ_Sitting	Case Evaluation – Physical activity	IPAQ	open	5a. Hoeveel tijd heeft u gemiddeld gezeten op een weekdag, in de laatste zeven dagen?	... uur ... minuten / dag
IPAQ_Sitting	Case Evaluation – Physical activity	IPAQ	open	5b. Hoeveel tijd heeft u gemiddeld gezeten op een weekenddag, in de laatste zeven dagen?	... uur ... minuten / dag
			Calc		



3.3. Work plan definition and execution.

Answer Autocheck Health Status (ENG)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Ph_autocheck1	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Breathing	1, I breathe worse than usual* 0, No changes in breathing pattern
Ph_autocheck2	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Vomit	1, I vomited 0, I have not vomited
Ph_autocheck3	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Dizziness	1, I feel dizzy often* 0, I do not get dizzy
Ph_autocheck4	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Eating	1, I eat less than usual* 0, No changes in eating pattern
Ph_autocheck5	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Drinking	1, I drink less than usual 0, No changes in drinking pattern
Ph_autocheck6	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Urinating	1, I urinate less than usual 0, No changes in urinating pattern
Ph_autocheck7	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Defecating	1, I cannot defecate* 0, No changes in defecating pattern
Ph_autocheck8	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Moving	1, I move less than usual 0, No changes in moving pattern
Ph_autocheck9	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Temperature	1, I have fever (>37°)* 0, I don't have fever



Ph_autocheck10	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Resting and sleeping	1, I have more troubles resting / sleeping 0, No changes in my resting / sleeping pattern
Ph_autocheck11	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Body cleansing	1, I need help 0, I do it on my own
Ph_autocheck12	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Dressing	1, I need help 0, I do it on my own

Answer Autocheck Health Status (DUTCH)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
Ph_autocheck1	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Ademen	1, Ik ben benauwder dan normaal* 0, Geen verandering
Ph_autocheck2	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Braken	1, Ik heb gebraakt 0, Ik heb niet gebraakt
Ph_autocheck3	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Duizeligheid	1, Ik ben duizelig* 0, Ik ben niet duizelig
Ph_autocheck4	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Eten	1, Ik eet minder* 0, Geen verandering
Ph_autocheck5	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Drinken	1, Ik drink minder 0, Geen verandering



Ph_autocheck6	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Urineren	1, Ik urineer minder dan normaal 0, Geen verandering
Ph_autocheck7	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Ontlasting krijgen	1, Ik krijg geen ontlasting* 0, Geen verandering
Ph_autocheck8	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Bewegen	1, Ik beweeg minder dan normaal 0, Geen verandering
Ph_autocheck9	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Temperatuur	1, Ik heb koorts (>38.5 ^o)* 0, Ik heb geen koorts
Ph_autocheck10	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Rusten en slapen	1, Ik heb problemen met slapen 0, Geen verandering
Ph_autocheck11	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Wassen	1, Ik heb hulp 0, Ik heb geen hulp nodig
Ph_autocheck12	Work-plan execution – Autocheck Health Status	Autocheck Health Status	radio	Aan/uitkleden	1, Ik heb hulp 0, Ik heb geen hulp nodig

3.3. Discharge

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
discharge1	Discharge – Patient	Patient’s Discharge Notification	Radio	Notify the discharge to the patient?	0, No 1, Yes
discharge2	Discharge - Professional	Patient’s Discharge	radio	Discharge the patient?	0, No 1, Yes



6.2.4 Assuta (Israel)



CONNECARE

Case Study 1 - Definition

Israel – Assuta & eWAVE

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

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PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
CO	Confidential, only for members of the consortium (including the Commission Services)

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Abstract	
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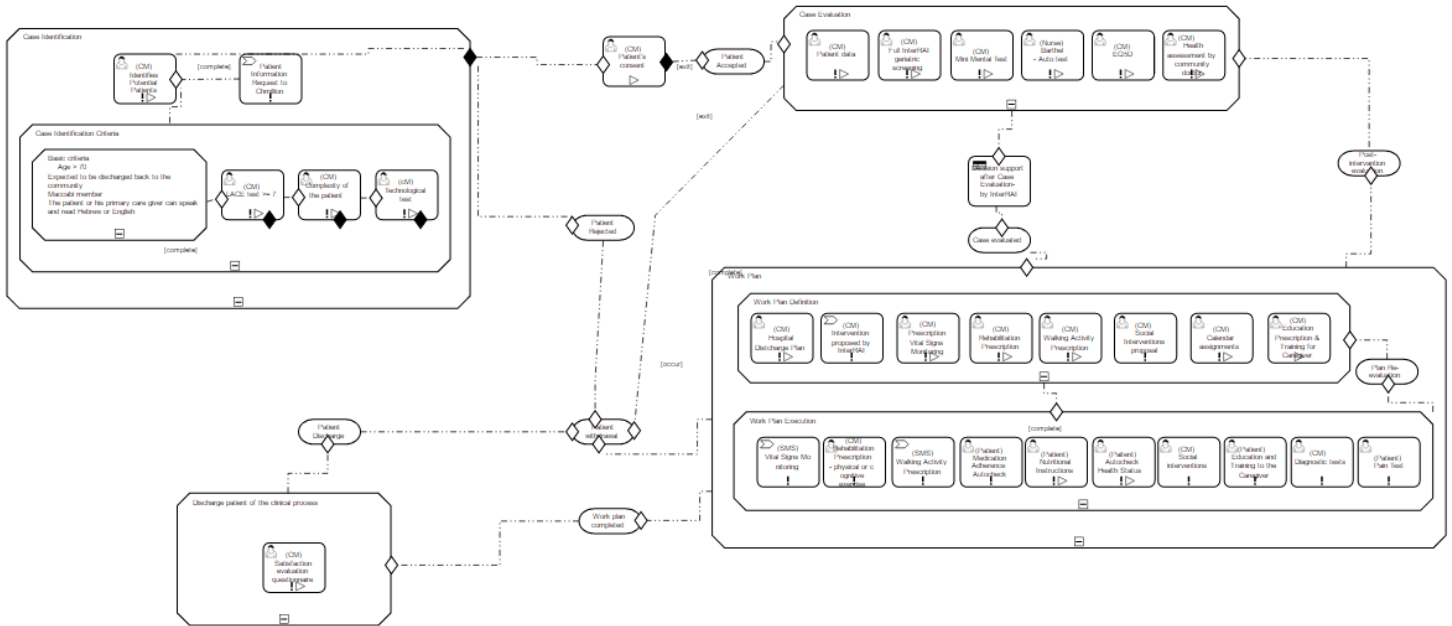


Executive Summary

This document summarizes the detailed flow of actions for Case 1 from patient identification through discharge from the study. The document also details all of the data to be collected and entered into the SACM for purposes of instructing the SMS as well as the documentation that will be needed for evaluation.



1. Case Study Diagram

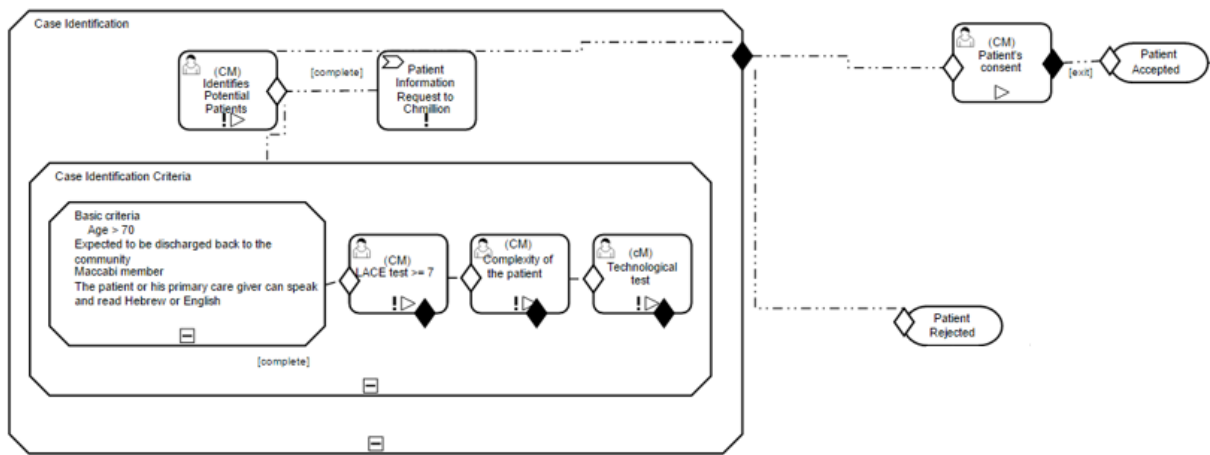




2. Forms Description by steps

This section presents all the forms used during the process of the CS1 in Assuta and Maccabi. Some of these forms will be performed by the SACM, some by the SMS and some by other systems external to CONNECARE.

2.1 Case Identification Criteria



2.1.1 Basic criteria

Name
Basic criteria
The text of the questionnaire
No formal questionnaire – yes/no answers to the following criteria
Description
1. Age > 70
2. Expected to be discharged back to the community
3. Maccabi member
4. The patient or his primary care giver can speak and read Hebrew or English
Responsible
Assuta or Maccabi Case Manager
CONNECARE Subsystem
The CM should enter the results (yes/no) in to the SACM
Comments
We will enter to the SACM data only for patients that are suitable according to inclusion criteria and gave their consent. This questions in the SACM are for documentation purposes only, because they will always be answered as YES.



2.1.2 LACE Test

Name
LACE index
The text of the questionnaire (ENG)
http://www.besler.com/lace-risk-score/
Description
Identifies patients that are at risk for readmission or death within thirty days of discharge.
Responsible
Assuta or Maccabi Case Manager
CONNECARE Subsystem
The CM should enter all the data into the SACM.
Comments
This will be done in English, no translation is needed. The SACM will calculate the result.

2.1.3 Complexity of the patient

Name
Patient matches at least 3 of the criteria
The text of the questionnaire
No formal questionnaire – yes or no answers to the equations
Description
At least 3 out of the following criteria: <ul style="list-style-type: none"> • Poly-pharmacy (Regular use > 8 medications) • >1 Non-elective hospitalizations OR Visits to the emergency room during the past year • Malnutrition • Elements of dependency/socioeconomic status
Responsible
Assuta Case Manager or Maccabi Case manager
CONNECARE Subsystem
The CM should enter the results (yes/ no) in to the SACM
Comments
Non

2.1.4 Technological Test

Name
Technological Test
The text of the questionnaire
No formal questionnaire – yes or no answers to the equations
Description
<ol style="list-style-type: none"> 1. The patient or his primary caregiver has an active Maccabi online password 2. The patient or his primary caregiver has basic technology experience with mobile apps 3. The patient has home internet access (via WiFi or mobile 3G internet)
Responsible
Assuta Case Manager or Maccabi Case manager
CONNECARE Subsystem
The CM should enter the results in to the SACM for each question.

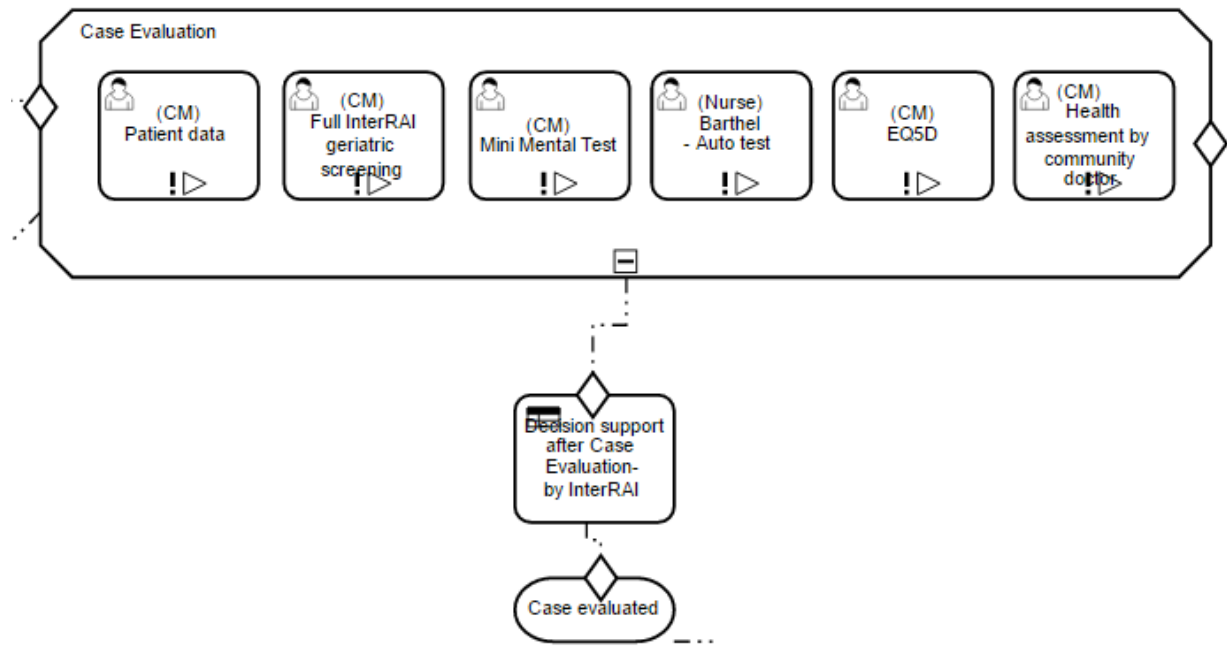


2.1.5 Patient's Consent

Name
Patient Consent
The text of the questionnaire (HBE)
Description
Consent form approved by the ethics committee, to be signed by the patient on hard copy.
Responsible
Maccabi Case Manager in Assuta hospital or Maccabi Case Manager in the community
Comments
The CM should enter the result (yes/ no) in to the SACM. We will enter to the SACM data only for patients that are suitable according to inclusion criteria and gave their consent. This question in the SACM is for documentation purposes only, because it will always be a YES.



2.2 Case Evaluation



2.2.1 Patient's data (automatically or manually typing)

Name
Patient data
The text of the questionnaire (ENG&HBE)
All data on the patient that we need or want to keep
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data is automatically obtained from the information systems to the SACM or by manually typing



2.2.2 Full InterRAI Geriatric screening

Name
InterRAI geriatric screening
The text of the questionnaire (ENG&HBE)
Attached in the end of this document.
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data to be fed into the SACM system is not clear yet, whether all questions or just some. The recommendations from the Full InterRAI Geriatric screening will not be here but in work plan definition.

2.2.3 Mini Mental test

Name
Mini-Mental State Examination (MMSE)
The text of the questionnaire - URL (ENG)
http://www.dementiatoday.com/wp-content/uploads/2012/06/MiniMentalStateExamination.pdf
The text of the questionnaire (HBE)
Attached in the end of this document.
Description
A 30-point questionnaire to measure cognitive impairment.
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The SACM will calculate the result.

2.2.4 Barthel - Auto test

Name
Barthel Index Scoring Form
The text of the questionnaire - URL (ENG)
http://www.massgeneral.org/stopstroke/assets/PDFs/barthel_index.pdf
The text of the questionnaire (HBE)
Attached in the end of this document.
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM & SMS
Comments
The nurse should enter all data into the SACM during first evaluation. To be filled by the patient during ongoing-evaluation in the SMS. The SACM will calculate the result.



2.2.5 EQ5D - Auto test

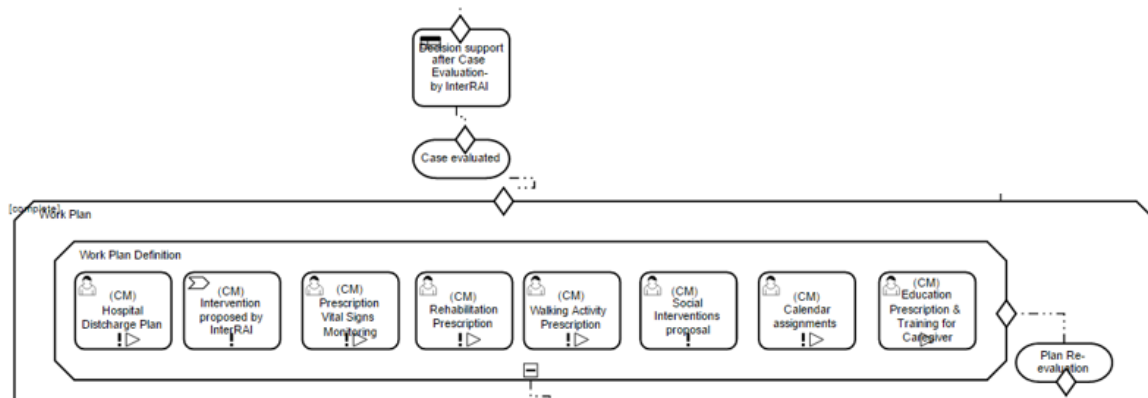
Name
EQ5D
The text of the questionnaire - URL (ENG)
LINK
The text of the questionnaire (HBE)
Attached in the end of this document.
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM & SMS
Comments
The nurse should enter all data into the SACM during first evaluation. To be filled by the patient during ongoing-evaluation in the SMS.

2.2.6 Health assessment by community Doctor

Name
Health assessment by community doctor
The text of the questionnaire (ENG)
No formal questioner.
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The clinician will enter his post discharge instructions into Maccabi system. The CM will enter data to the SACM about diagnosis, medications, referrals and other important information. According to what is needed the CM will also use data from the clinician's EMR when setting other fields in the work plan definition (Medication, rehabilitation...).



2.3 Work-plan Definition



2.3.1 Hospital Discharge Plan

Name
Hospital Discharge Plan
Responsible
Maccabi Case Manager in the hospital or in the community
CONNECARE Subsystem
SACM
Comments
The CM will enter information about diagnosis, medications, referrals and other important information. According to what is needed the CM will also use data from the discharge plan when setting other fields in the work plan definition (Medication, rehabilitation...).

2.3.2 Intervention proposed by InterRAI

Name
Intervention proposed by InterRAI
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM & InterRAI
Comments
The CM will type here the recommendations of the Full InterRAI Geriatric screening that was done during Case evaluation.



2.3.3 Prescription Vital Signs Monitoring

Name
Prescription Vital Signs Monitoring
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. The signs that can be monitored are: Weight, Oxygen Saturation, Blood Pressure level, blood glucose level and Temperature. The data will be monitored by accessories and sent automatically back to the SACM. In case of devices not connected to the SMS (such as temperature) there will be a form to enter the data by the patient.

2.3.4 Rehabilitation Prescription - physical or cognitive exercise

Name
Rehabilitation Prescription
Description
Physiotherapist or Occupational therapist instructions for physical or cognitive exercise
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
Rehabilitation instructions which will be given to the patient by the physiotherapist or the occupational therapist - physical or cognitive exercises. The data will be sent to the SMS. The patient will click a YES button after doing the exercise. All rehabilitation exercises except for walking.

2.3.5 Walking Activity Prescription

Name
Walking Activity Prescription
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS and monitored by FitBit bracelet.



2.3.6 Prescription Medication Adherence

Name
Prescription Medication Adherence
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. The patient will click a YES button after taking the medication.

2.3.7 Nutritional Instructions

Name
Nutrition Instructions
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The CM will enter to the SACM special instructions regarding nutrition – like No salt... The data will be sent to the SMS (VitalinQ).

2.3.8 Prescription Autocheck Health Status

Name
Prescription Autocheck Health Status
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. There are different autocheck forms depending on the patient's situation.

2.3.9 Social interventions

Name
Social Interventions proposal
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The social worker decides on actions needed (either resumption of preexisting prior to hospitalization or new), The CM will enter data to the SACM.



2.3.10 Calendar assignments

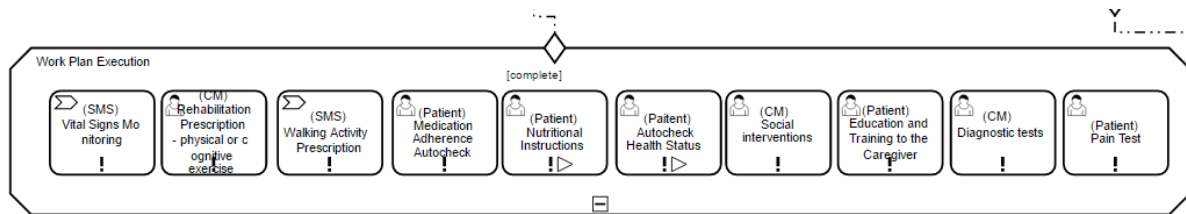
Name
Calendar assignments
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM + SMS
Comments
The CM can enter to the SACM and the patient can enter to the SMS all the patient's appointments.

2.3.11 Education Prescription & Training for patient and Caregiver

Name
Education Prescription & Training for Caregiver
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. The education material and outline is standard so cannot be customizable for each patient.



2.4 Work-plan Execution



2.4.1 Vital Signs Monitoring

The data will be obtained directly from the smart devices. The patient will be alert to use the proper device corresponding with the prescription but no form will be showed to be fulfilled. In case of devices not connected to the SMS (such as temperature) there will be a form to enter the data by the patient.

2.4.2 Rehabilitation Prescription - physical or cognitive exercise

The patient will have alerts in the SMS with the prescription and proper details. The patient will answer in the SMS app if he had done the exercise and how hard was it.

2.4.3 Walking Activity Prescription

The data will be obtained directly from the fitness trackers. The patient will receive a reminder to walk.

2.4.4 Medication Adherence Autocheck

The patient will have alerts in the SMS with the prescription and proper details, the patient will click a YES button after taking the medication.

2.4.5 Nutritional Instructions

The patient will enter data to his nutrition dairy in VitalinQ.

2.4.6 Autocheck Health Status

The patient will fill the form and the data will be sent to the SACM for the CM to review as necessary.

2.4.7 Social interventions

The CM/caregiver/patient will enter the status of the intervention that was entered to the SMS or SACM in the work plan definition.

2.4.8 Patient Education and Training to the Caregiver

This form collects the status of educational events.

2.4.9 Diagnostic tests

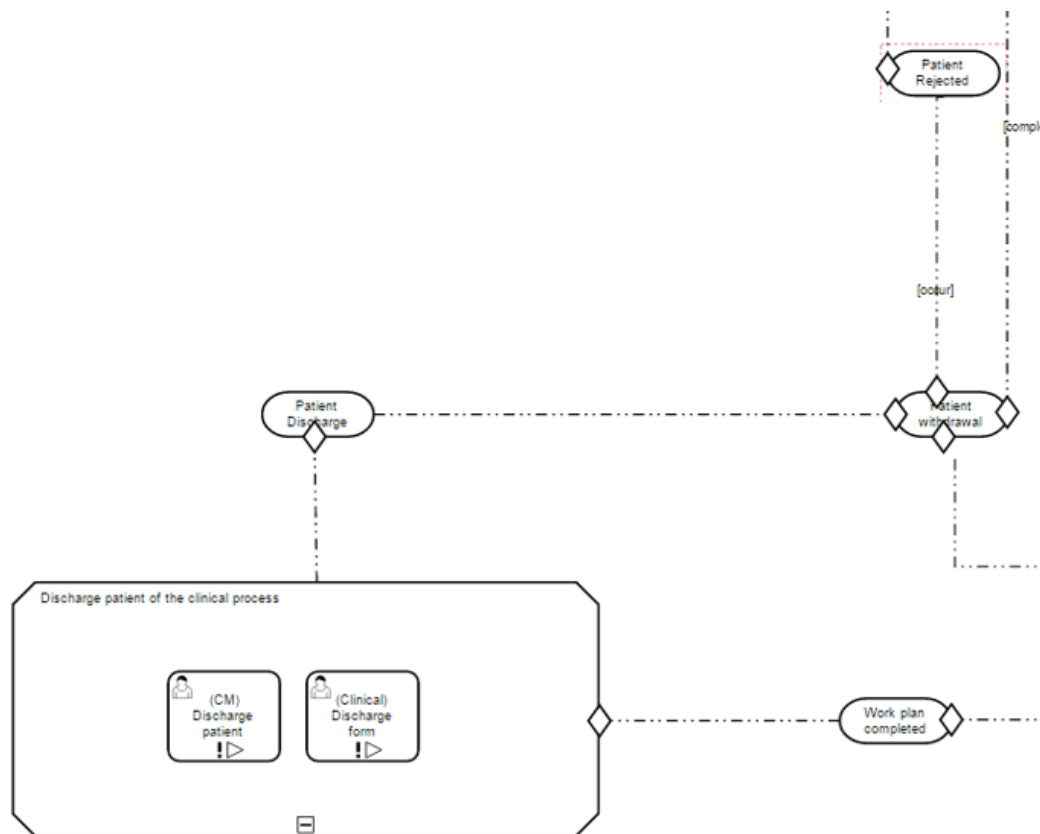


Name
Diagnostic tests
Responsible
Patient and Maccabi Case Manager in the community
CONNECARE Subsystem
SMS + SACM
Comments
The patient and the CM can enter the result of the test.

2.4.10 Pain Test

Name
Verbal Numerical Rating Scale after hospitalization
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
Numbered scale ranging from 0 to 10, where 0 corresponds to absence of pain and 10 to maximum pain intensity. The patient selects the number that better suits the intensity of the symptom. A value over 5 raises an alarm.

2.5 Discharge





2.5.1 Satisfaction evaluation questionnaire

Name
Satisfaction evaluation questionnaire
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
<TBD>



3. Data Collection

3.1 Case Identification

3.1.1 Basic criteria

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
BasicCriteria1	Basic criteria	Age	radio	Age > 70	1, No 0, Yes
BasicCriteria2	Basic criteria	Discharged	radio	Expected to be discharged back to the community	1, No 0, Yes
BasicCriteria3	Basic criteria	Maccabi member	radio	Maccabi member	1, No 0, Yes
BasicCriteria4	Basic criteria	Language	radio	The patient or his primary care giver can speak and read Hebrew or English	1, No 0, Yes

* In Assuta yes is default for all fields

3.1.2 LACE Test

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
lace1	Lace test	radio	Length of Stay (including day of admission and discharge)	1, 1 day 2, 2 days 3, 3 days 4, 4-6 days 5, 7-13 days 7, 14 or more days
Lace2	Lace test	radio	Was the patient admitted to hospital via the emergency department?	0, No 1, Yes In Assuta 3 is default!
Lace3	Lace test	radio	Conditions - Previous myocardial infarction	0, No 1, Yes
Lace4	Lace test	radio	Conditions - Cerebrovascular disease	0, No 1, Yes
Lace5	Lace test	radio	Conditions - Peripheral vascular disease	0, No 1, Yes
Lace6	Lace test	radio	Conditions - Diabetes without complications	0, No 1, Yes
Lace7	Lace test	radio	Conditions - Congestive heart	0, No 2, Yes



			failure	
Lace8	Lace test	radio	Conditions - Diabetes with end organ damage	0, No 2, Yes
Lace9	Lace test	radio	Conditions – Chronic pulmonary disease	0, No 2, Yes
Lace10	Lace test	radio	Conditions – Mild liver or renal disease	0, No 2, Yes
lace11	Lace test	radio	Conditions – Any tumor (including lymphoma or leukemia)	0, No 2, Yes
Lace12	Lace test	radio	Conditions - Dementia	0, No 3, Yes
Lace13	Lace test	radio	Conditions – Connective tissue disease	0, No 3, Yes
Lace14	Lace test	radio	Conditions – AIDS	0, No 4, Yes
Lace15	Lace test	radio	Conditions – Moderate or severe liver or renal disease	0, No 4, Yes
Lace16	Lace test	radio	Conditions – Metastatic solid tumor	0, No 6, Yes
Lace17	Lace test	calc	Comorbidities	sum(lace3-16)
Lace18	Lace test	radio	Emergency department visits (six months prior to admission)	0, 0 visits 1, 1 visits 2, 2 visits 3, 3 visits 4, 4 or more visits
Lace19	Lace test	calc	LACE Score Risk of Readmission	sum([lace1], [lace2], [lace17], [lace18])

3.1.3 Complexity of the patient

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
CCP1	Complexity of the patient	Poly-pharmacy	radio	Poly-pharmacy (Regular use > 8 medications)	1, No 0, Yes
CCP1	Complexity of the patient	Hospital / Emergency admissions	radio	>1 Non-elective hospitalizations OR Visits to the ER during the past year	1, No 0, Yes



CCP1	Complexity of the patient	Malnutrition	radio	Malnutrition	1, No 0, Yes
CCP1	Complexity of the patient	dependency/socioeconomic status	radio	Elements of dependency/socioeconomic status	1, No 0, Yes

3.1.4 Technological Test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
tech1	Technological Test	Maccabi online user	checkbox	The patient or his primary care giver has an active Maccabi online password	0, Neither has online password 1, Patient has online password 2, Care giver has online password 3, Both has online password
Tech2	Technological Test	basic technology experience	radio	The patient or his primary care giver has basic technology experience with mobile apps	0, Neither has experience 1, Patient has experience 2, Care giver has experience 3, Both have experience
Tech3	Technological Test	internet access	radio	The patient has home internet access (via WiFi or mobile 3G internet)	0, No 1, Yes

3.1.5 Patient's Consent

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
pConsent1	Patient's Consent	radio	The patient gave his consent to participate in the study	0, No 1, Yes In Assuta yes is default for all fields
pConsent2	Patient's Consent	Date	Date of consent	dd/mm/yyyy



3.2 Case Evaluation

3.2.1 Patient's data (automatically or manually typing)

Var. Name = Field Label	Form Name	Section Header	Field Type	Choices calculations
First_N	New Case	Personal info	Free Text	
Last_N	New Case	Personal info	Free Text	Not real name!!!
BDate	New Case	Personal info	Date	
P_Num	New Case	Personal info	Num	Serial number and not real ID
Age	New Case	Personal info	70 < Num < 120	
Gender	New Case	Personal info	radio	0, Female 1, Male
Marital Status	New Case	Personal info	Check box	0 single, 1 married, 2 divorced,3 widowed, 4 living with a partner
Socio-cultural level	New Case	Personal info	radio	
Education (No of years)	New Case	Personal info	Num	
Work statuses	New Case	Personal info	Check box	0, Pension 1, Part time worker 2, full time worker
Income supplement subsidy	New Case	Personal info	radio	0, No 1, Yes
Other social security subsidies	New Case	Personal info	radio	0, No 1, Yes
Email	New Case	Personal info	Free verified Text	
Phone_Num	New Case	Personal info	Free verified Text	
Mobile_Num	New Case	Personal info	Free verified Text	
Address	New Case	Personal info	Free verified Text	
Language	New Case	Personal info	radio	1 English, 2 Hebrew, 3 Spanish, 4 Dutch
Name and contact of Primary physician in the community	New Case	Personal info	Free Text	
Diagnosis	New Case	medical info	dropdown	There can be more than 8 diagnosis
Medications	New Case	medical info	dropdown	There can be more than 8 medications
Allergies	New Case	medical info	dropdown	
Other	New Case	medical info	Free text	



3.2.2 Full InterRAI Geriatric screening

TBD - The data to be fed into the SACM is not clear yet, whether all questions or just main subjects.

The suggestions of the Full InterRAI Geriatric screening will not be here but in work plan definition.

Var. Name	Form Name	Section Header	Field Type	Choices /calculations
interRAI-C	interRAI	Cognitive Status	TBD	Consists of 3 questions
interRAI-D	interRAI	Communication and vision	TBD	Consists of 4 questions
interRAI-E	interRAI	Mood	TBD	Consists of 2 questions
interRAI-F	interRAI	Satisfaction with the psycho-social situation	TBD	Consists of 5 questions
interRAI-G	interRAI	Functional status	TBD	Consists of 6 questions
interRAI-H	interRAI	In-continance	TBD	Consists of 1 questions
interRAI-I	interRAI	Diagnosis	TBD	Consists of 2 questions
interRAI-J	interRAI	Health conditions	TBD	Consists of 8 questions
interRAI-K	interRAI	Nutritional status	TBD	Consists of 1 questions
interRAI-L	interRAI	Medication	TBD	Consists of 2 questions
interRAI-M	interRAI	Medical treatments and procedures	TBD	Consists of 2 questions
interRAI-N	interRAI	Social relations	TBD	Consists of 1 questions
interRAI-o	interRAI	Evaluation of the environment	TBD	Consists of 1 questions
interRAI-p	interRAI	Discharge data	TBD	Consists of 2 questions
Interraingenericresult1	interRAI	Numeric result	Num	



3.2.3 Mini Mental Test (ENG)

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
MiniMental1	Mini Mental Test	Num	orientation	0 < Num < 5
MiniMental2	Mini Mental Test	Num	Instant memory	0 < Num < 3
MiniMental3	Mini Mental Test	Num	Concentration and calculus	0 < Num < 5
MiniMental4	Mini Mental Test	Num	language	0 < Num < 5
MiniMental5	Mini Mental Test	Num	Perform a three-step instruction	0 < Num < 3
MiniMental6	Mini Mental Test	Num	reading	0 < Num < 1
MiniMental7	Mini Mental Test	Num	writing	0 < Num < 1
MiniMental8	Mini Mental Test	Num	copying	0 < Num < 1
MiniMentalresult	Mini Mental Test	calc	Result	sum(MiniMental1-8)

3.2.4 Barthel test (ENG)

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Barthel1	Barthel test	Radio	FEEDING	0 = unable 5 = needs help cutting, spreading butter, etc. or requires modified diet 10 = independent
Barthel2	Barthel test	Radio	BATHING	0 = dependent 5 = independent (or in shower)
Barthel3	Barthel test	Radio	GROOMING	0 = needs to help with personal care 5 = independent face/hair/teeth/shaving (implements provided)
Barthel4	Barthel test	Radio	DRESSING	0 = dependent 5 = needs help but can do about half unaided 10 = independent (including buttons, zips, laces, etc.)
Barthel5	Barthel test	Radio	BOWELS	0 = incontinent (or needs to be given enemas) 5 = occasional accident 10 = continent
Barthel6	Barthel test	Radio	BLADDER	0 = incontinent, or catheterized and unable to manage alone 5 = occasional accident 10 = continent
Barthel7	Barthel test	Radio	TOILET USE	0 = dependent 5 = needs some help, but can do something alone 10 = independent (on and off, dressing, wiping)
Barthel8	Barthel test	Radio	TRANSFERS	0 = unable, no sitting balance 5 = major help (one or two people, physical), can sit 10 = minor help (verbal or physical) 15 = independent
Barthel9	Barthel test	Radio	MOBILITY	0 = immobile or < 50 yards 5 = wheelchair independent, including corners, >50 yards



				10 = walks with help of one person (verbal or physical) > 50 yards 15 = independent (but may use any aid; for example, stick) > 50 yards
Barthel10	Barthel test	Radio	STAIRS	0 = unable 5 = needs help (verbal, physical, carrying aid) 10 = independent
BarthelScore	Barthel test	calc	TOTAL SCORE	sum(Barthel1-9)

3.2.5 EQ5D (ENG)

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
EQ5D1	EQ5D	Radio	MOBILITY	I have no problems in walking about I have slight problems in walking about I have moderate problems in walking about I have severe problems in walking about I am unable to walk about
EQ5D2	EQ5D	Radio	SELF-CARE	I have no problems washing or dressing myself I have slight problems washing or dressing myself I have moderate problems washing or dressing myself I have severe problems washing or dressing myself I am unable to wash or dress myself
EQ5D3	EQ5D	Radio	USUAL ACTIVITIES	I have no problems doing my usual activities I have slight problems doing my usual activities I have moderate problems doing my usual activities I have severe problems doing my usual activities I am unable to do my usual activities
EQ5D4	EQ5D	Radio	PAIN / DISCOMFORT	I have no pain or discomfort I have slight pain or discomfort I have moderate pain or discomfort I have severe pain or discomfort I have extreme pain or discomfort
EQ5D5	EQ5D	Radio	ANXIETY / DEPRESSION	I am not anxious or depressed I am slightly anxious or depressed I am moderately anxious or depressed I am severely anxious or depressed I am extremely anxious or depressed
EQ5D6	EQ5D	Num	YOUR HEALTH TODAY	0 < Num < 100



3.2.6 Health assessment by community doctor (After discharge)

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
CDHealthAss	Health assessment by community doctor	DATE	Date	Date of assessment	Dd/mm/yyyy
CDHealthAss	Health assessment by community doctor	Diagnosis	Radio	Was there a change in the patient's diagnosis following hospital discharge?	Yes No
CDHealthAss	Health assessment by community doctor	Diagnosis	dropdown	The complete new diagnosis	There can be more than 8 diagnosis per patient
CDHealthAss	Health assessment by community doctor	Medications	Radio	Was there a change in the patient's medication prescription following hospital discharge?	Yes No
CDHealthAss	Health assessment by community doctor	Medications	dropdown	The complete new medication prescription	There can be more than 8 medications per patient
CDHealthAss	Health assessment by community doctor	Professional Referral	Radio	Was there any Referrals to professional staff following hospital discharge?	Yes No
CDHealthAss	Health assessment by community doctor	Professional Referral	Checkbox	What referrals?	<ol style="list-style-type: none"> 1. specialized doctor 2. Physiotherapist 3. Nutritionist 4. Occupational Therapy 5. Diagnostic tests: lab, imaging . ECG
CDHealthAss	Health assessment by community doctor	Other	Free text	Is there other important information from the community doctor's visit?	



3.3 Work-plan Definition

3.3.1 Hospital Discharge Plan

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
HDPlan	Hospital discharge plan	Diagnosis	Radio	Was there a change in the patient's diagnosis during hospitalization?	Yes No
HDPlan	Hospital discharge plan	Diagnosis	dropdown	The complete new diagnosis	There can be more than 8 diagnosis per patient
HDPlan	Hospital discharge plan	Medications	Radio	Was there a change in the patient's medication prescription as a result of hospitalization?	Yes No
HDPlan	Hospital discharge plan	Medications	dropdown	The complete new medication prescription	There can be more than 8 medications per patient
HDPlan	Hospital discharge plan	Professional Referral	Radio	Was there any Referrals to professional staff?	Yes No
HDPlan	Hospital discharge plan	Professional Referral	Checkbox	What referrals?	<ol style="list-style-type: none"> 1. specialized doctor 2. Physiotherapist 3. Nutritionist 4. Occupational Therapy 5. Diagnostic tests
HDPlan	Hospital discharge plan	Social needs	Checkbox	Did the patient have social help prior to hospitalization?	<TBD>
HDPlan	Hospital discharge plan	Special needs	Checkbox	Is the patient in need of special care?	<TBD> <ol style="list-style-type: none"> 1. Home care 2. Home hospitalization 3. MOMA 4. רעות להוסיף מהמצפן ומהתקציר של רחל
HDPlan	Hospital discharge plan	Other	Free text	Is there other important information?	



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3.3.2 Intervention proposed by InterRAI

The CM will type here the recommendations of the InterRAI that was done during Case evaluation.

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Interrairresult2	interRAI	Textual Recommendations	Free text	

3.3.3 Prescription Vital Signs Monitoring

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Pvsm3	Prescription Vital Signs Monitoring	dropdown	Type of measurement	0, Weight 1, Oxygen Saturation 2, Blood Pressure 3, Heart rate 4, Temperature 5 Blood glucose level
Pvsm1	Prescription Vital Signs Monitoring	Date	Start date	
Pvsm2	Prescription Vital Signs Monitoring	Date	End date	
Pvsm3	Prescription Vital Signs Monitoring	Dropdown	Units of frequency:	0, Hours 1, Days 2, Weeks 3, months
Pvsm4	Prescription Vital Signs Monitoring	Text	Frequency per unit:	
Pvsm5	Prescription Vital Signs Monitoring	Num	Min. Threshold	The CM will get a warning when the result below
Pvsm6	Prescription Vital Signs Monitoring	Num	Max. Threshold	The CM will get a warning when the result is above

3.3.4 Rehabilitation Prescription - physical or cognitive exercise

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
rehabPresc1	Rehab Prescription	dropdown	Type of exercise (Except for walking)	List of possible activities - TBD 0, climbing steps 1, Hand grip ... reading ...
rehabPresc2	Rehab Prescription	Date	Start date	
rehabPresc3	Rehab Prescription	Date	End date	
rehabPresc4	Rehab Prescription	dropdown	Units of frequency:	0, Hours 1, Days 2, Weeks 3, months
rehabPresc5	Rehab Prescription	Num	Frequency per unit:	
rehabPresc6	Rehab Prescription	Num	Need to repeat the exercise __ times every session :	



3.3.5 Walking Activity Prescription

Var. Name	Form Name	Field Type	Field Label
physicalP1	Walking Activity Prescription	Date	Start date
physicalP2	Walking Activity Prescription	Date	End date
physicalP3	Walking Activity Prescription	Text	Number of steps daily
physicalP4	Walking Activity Prescription	Text	Intensity of the activity: Minutes of medium level activity daily.
physicalP5	Walking Activity Prescription	Text	Intensity of the activity: Minutes of high level activity daily.
physicalP6	Walking Activity Prescription	Text	Max. minutes without activity allowed daily.

3.3.6 Prescription Medication Adherence

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
MedPresc1	Prescription Medication Adherence	dropdown	Medication name/code	
MedPresc2	Prescription Medication Adherence	Date	Start date	
MedPresc3	Prescription Medication Adherence	Date	End date	
MedPresc4	Prescription Medication Adherence	dropdown	Units of frequency:	0, Hours 1, Days 2, Weeks 3, months
MedPresc5	Prescription Medication Adherence	Num	Frequency per unit:	
MedPresc6	Prescription Medication Adherence	Text	Special comments	

3.3.7 Nutritional Instructions

TBD Will there be a link between the SACM and the Vitalinq App so that instructions by the dietician can be incorporated? This can include special instructions such as "no salt", number of calories per day, number and size of meals per day, specific diet.....

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Nutrition_Instru	Nutritional Instructions	dropdown	Special instructions	0. No Salt.... <TBD>



3.3.8 Prescription Autocheck Health Status

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
autocheckP1	Autocheck Health Status Prescription	Dropdown	Type of questionnaire	0, Barthel 1, EQ5D 2, How do you feel today? 3, Did you eat today? 4, Did you leave the house today? ... TBD
autocheckP2	Autocheck Health Status Prescription	Date	Start date	
autocheckP3	Autocheck Health Status Prescription	Date	End date	
autocheckP4	Autocheck Health Status Prescription	Dropdown	Units of frequency	0, hours 1, days 2, weeks 3, months
autocheckP5	Autocheck Health Status Prescription	Text	Frequency	

3.3.9 Social interventions

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
SWInt	Social intervention	DATE	Date	Date of the meeting	Dd/mm/yyyy
SWInt	Social intervention	Intervention suggested	Checkbox	Intervention suggested:	<TBD>

3.3.10 Calendar assignments

The CM and the patient can enter to the SMS/SACM all the patient's appointments.

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Calander1	Calendar assignments	dropdown	Type of Meeting	1, specialized doctor 2,Physiotherapist 3, Nutritionist 4,Occupational Therapy 5, Other
Calander2	Calendar assignments	Date and time	Date and time	
Calander3	Calendar assignments	Text	Address	
Calander3	Calendar assignments	Text	Comments	



3.3.11 Patient and Caregiver Education and Training

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
educaDef1	education and training	Radio	Target population	0, patient 1, care giver 2, both
educaDef2	education and training	Dropdown	Education subject	0, Surgery or treatment 1, nutrition 2, rehabilitation 3, Physical activity 4, Smoking 5, about ConneCare 6, other
educaDef3	education and training	Dropdown	Type	0, Attached file 1, Link
educaDef4	education and training	attached file / hyper text	attach file / link	



3.4 Work-plan Execution

Reporting process and protocol to be defined by the SACM & SMS responsible.

3.4.1 Vital Signs Monitoring

The data will be obtained directly from the smart devices. The patient will be reminded to use the proper device corresponding with the prescription but no form will be showed to be filled. In case of devices not connected to the SMS (such as temperature) there will be a form to enter the data by the patient.

3.4.2 Rehabilitation Prescription - physical or cognitive exercise

The patient will have alerts in the SMS with the prescription and proper details. The patient will answer in the SMS app if he had done the exercise and how hard it was.

3.4.3 Walking Activity Prescription

The data will be obtained directly from the fitness trackers. The patient will be alert with the prescription and proper alerts but no form will be showed to be filled.

3.4.4 Medication Adherence Autocheck

The patient will be alert with the prescription and proper alerts, the patient will click a YES button after taking the medication.

3.4.1 Nutritional Instructions

The patient will enter data to his nutrition dairy in VitalinQ.

3.4.2 Autocheck Health Status

The patient will fill the form and the data will be sent to the SACM for the CM to review as necessary.

3.4.3 Social interventions

The CM/caregiver/patient will enter the status of the intervention that was entered to the SMS or SACM in the work plan definition.

3.4.4 Patient and Caregiver Education and Training

This form collects the status of educational events.



3.4.5 Diagnostic tests

The data will be sent to the SMS, the patient and the CM can enter the result of the test.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
DiagTest	Diagnostic tests	DATE	Date	Date of the test	Dd/mm/yyyy
DiagTest	Diagnostic tests	Type	Checkbox	Name of test	<TBD>
DiagTest	Diagnostic tests	Result	Num	Result	
DiagTest	Diagnostic tests	Result	Radio	Positive or Negative	1, Positive 2, Negative
DiagTest	Diagnostic tests	Comments	Free text	Comments	

3.4.6 Pain Test EVA

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
EVA0	Work-plan Execution – Pain Test EVA	Pain Test EVA			



3.5 Discharge from Clinical Process

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
discharge1	Discharge – Patient	Patient’s Discharge Notification	Radio	Notify the discharge to the patient?	0, No 1, Yes
discharge2	Discharge - Professional	Patient’s Discharge	radio	Discharge the patient?	0, No 1, Yes

3.5.1 Satisfaction evaluation questionnaire

Name
Satisfaction evaluation questionnaire
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
<TBD>



CONNECARE

Case Study 2 - Definition

Israel – Assuta & eWAVE

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

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Deliverable	Number	Title
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Abstract	
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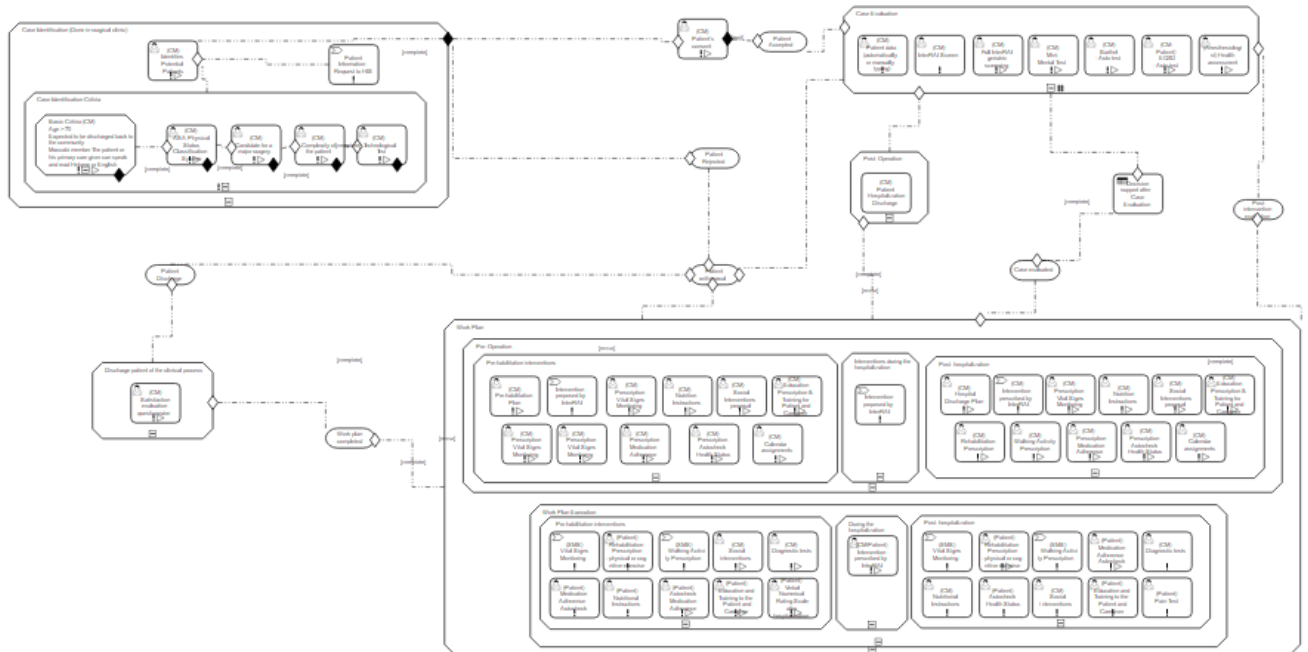


Executive Summary

This document summarizes the detailed flow of actions for Case 1 [or Case2] from patient identification through discharge from the study. The document also details all of the data to be collected and entered into the SACM for purposes of instructing the SMS as well as the documentation that will be needed for evaluation



1. Case Study Diagram

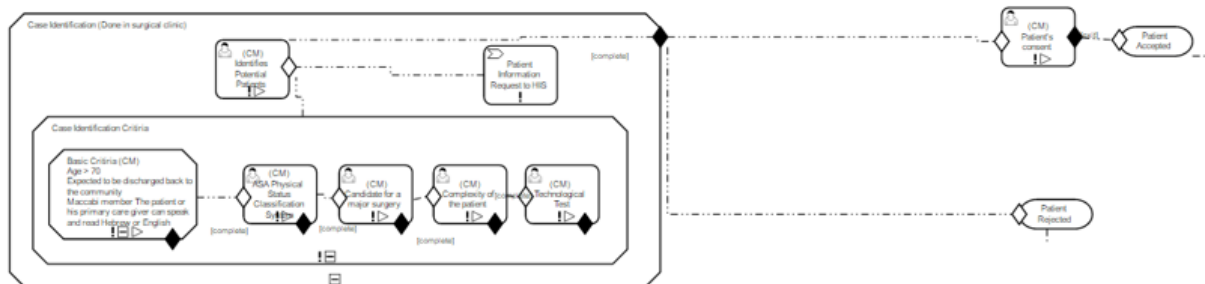




2. Forms Description by steps

This section presents all the forms used during the process of the CS1 in Assuta and Maccabi. Some of these forms will be performed by the SACM, some by the SMS and some by other systems external to CONNECARE.

2.1 Case Identification Criteria



2.1.1 Basic criteria

Name
Basic criteria
The text of the questionnaire
No formal questionnaire – yes/no answers to the following criteria
Description
1. Age > 70 2. Expected to be discharged back to the community 3. Maccabi member 4. The patient or his primary care giver can speak and read Hebrew or English
Responsible
Pre-habilitation Case Manager in Assuta hospital
CONNECARE Subsystem
SACM
Comments
We will enter to the SACM data only for patients that are suitable according to inclusion criteria and gave their consent. This questions in the SACM are for documentation purposes only, because they will always be answered as YES.

2.1.2 ASA Physical Status Classification System

Name
ASA Physical Status Classification System
URL (ENG)
https://www.asahq.org/resources/clinical-information/asa-physical-status-classification-system
Responsible
The clinician will decide on the ASA level and the CM will enter it to the SACM
CONNECARE Subsystem
SACM
Comments



The patient has to be classified in the classification II or III.

2.1.3 Candidate for a major surgery

Name
Candidate for a major surgery
The text of the questionnaire (ENG)
No formal questionnaire – yes/no answers to the following criteria
Description
The patient is candidate for one of this surgeries: Esophagectomy, Gastrectomy, Colorectal surgery, Whipple surgery, Major pancreatic and hepatic resection, bariatric surgery, Orthopaedic surgery or other major surgery
Responsible
Pre-habilitation Case Manager in Assuta hospital
CONNECARE Subsystem
SACM
Comments

2.1.4 Complexity of the patient

Name
Patient is diagnosed with at least one chronic disease
The text of the questionnaire
No formal questionnaire – yes or no answer to the equations
Description
The patient is diagnosed with at least one chronic disease (Cardio vascular diseases, COPD, Diabetes, Hypertension, Cancer, Obesity)
Responsible
Pre-habilitation Case Manager in Assuta hospital
CONNECARE Subsystem
The CM should enter the results (yes/ no) in to the SACM
Comments
Non

2.1.5 Technological Test

Name
Technological Test
The text of the questionnaire
No formal questionnaire – yes or no answers to the equations
Description
1. The patient or his primary caregiver has an active Maccabi online user 2. The patient or his primary caregiver has basic technology experience with mobile apps 3. The patient has home internet access (via WiFi or mobile 3G internet)
Responsible
Pre-habilitation Case Manager in Assuta hospital
CONNECARE Subsystem



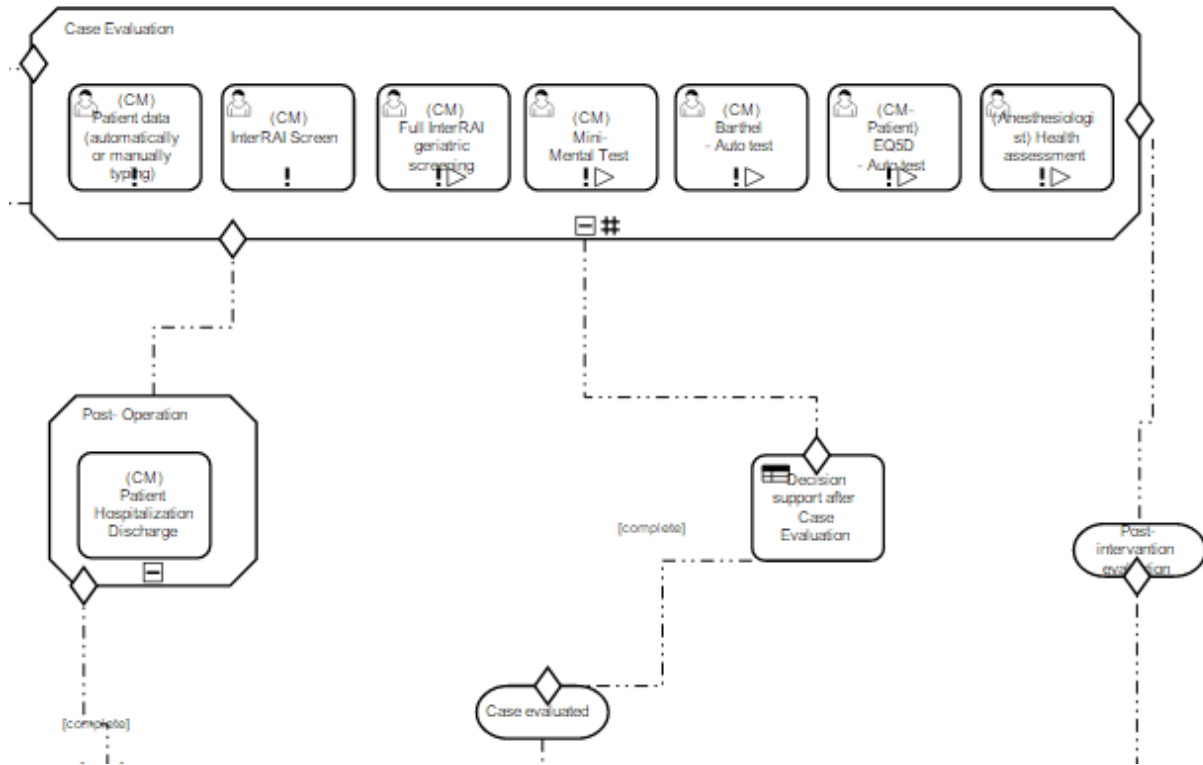
The CM should enter the results in to the SACM for each question.

2.1.6 Patient's Consent

Name
Patient Consent
The text of the questionnaire (HBE)
Description
Consent form approved by the ethics committee, to be signed by the patient on hard copy.
Responsible
Pre-habilitation Case Manager in Assuta hospital
Comments
The CM should enter the result (yes/ no) in to the SACM. We will enter to the SACM data only for patients that are suitable according to inclusion criteria and gave their consent. This question in the SACM is for documentation purposes only, because it will always be a YES.



2.2 Case Evaluation



2.2.1 Patient's data (automatically or manually typing)

Name
Patient data
The text of the questionnaire (ENG&HBE)
TBD – all data on the patient that we need or want to keep
Responsible
Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
The CM should enter the results in to the SACM
Comments
The data is automatically obtained from the information systems to the SACM or by manually typing

2.2.2 InterRAI Screen

Name
InterRAI Screen
The text of the questionnaire (ENG&HBE)
Attached in the end of this document.
Description
Responsible



Preop Nurse or Pre-habilitation Case Manager in Assuta hospital
CONNECARE Subsystem
SACM
Comments
All of the data will be entered into the SACM

2.2.3 Full InterRAI Geriatric screening

Name
InterRAI geriatric screening
The text of the questionnaire (ENG&HBE)
Attached in the end of this document.
Responsible
Geriatric Nurse
CONNECARE Subsystem
SACM
Comments
Only for patients scoring more than 6 in the interRAI screen. The data to be fed into the SACM system is not clear yet, whether all questions or just some. The recommendations from the Full InterRAI Geriatric screening will not be here but in work plan definition.

2.2.4 Mini Mental test

Name
Mini-Mental State Examination (MMSE)
The text of the questionnaire - URL (ENG)
http://www.dementiatoday.com/wp-content/uploads/2012/06/MiniMentalStateExamination.pdf
The text of the questionnaire (HBE)
Attached in the end of this document.
Description
A 30-point questionnaire to measure cognitive impairment.
Responsible
Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
SACM
Comments
The SACM will calculate the result.

2.2.5 Barthel - Auto test

Name
Barthel Index Scoring Form
The text of the questionnaire - URL (ENG)
http://www.massgeneral.org/stopstroke/assets/PDFs/barthel_index.pdf
The text of the questionnaire (HBE)
Attached in the end of this document.
Responsible



Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
SACM & SMS
Comments
The nurse should enter all data into the SACM during first evaluation. To be filled by the patient during ongoing-evaluation in the SMS. The SACM will calculate the result.

2.2.6 EQ5D - Auto test

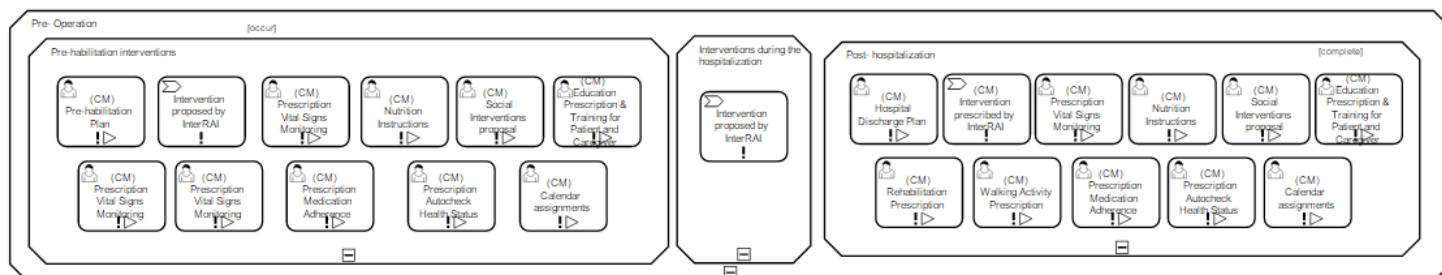
Name
EQ5D
The text of the questionnaire - URL (ENG)
LINK
The text of the questionnaire (HBE)
Attached in the end of this document.
Responsible
Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
SACM & SMS
Comments
The nurse should enter all data into the SACM during first evaluation. To be filled by the patient during ongoing-evaluation in the SMS.

2.2.7 Health assessment by Surgical Department and/or Anesthesiologist

Name
Health assessment by doctor
The text of the questionnaire (ENG)
No formal questionnaire.
Responsible
Clinician
CONNECARE Subsystem
SACM
Comments
The clinician examines the patients and enter summary of the examination to hospital EMR. The CM will enter data to the SACM .



2.3 Work-plan Definition



2.3.1 Definition of Pre-habilitation interventions

2.3.1.1 Pre-habilitation Plan

Name
Pre-habilitation Plan
Responsible
Pre-habilitation Case Manager in Assuta hospital
CONNECARE Subsystem
SACM
Comments
The CM will enter information about diagnosis, medications, referrals and other important information. According to what is needed the CM will also use this data when setting other fields in the work plan definition (Medication, rehabilitation...).

2.3.1.2 Intervention proposed by InterRAI

Name
Intervention proposed by InterRAI
Responsible
Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
SACM & InterRAI
Comments
The CM will type here the recommendations of the Full InterRAI Geriatric screening <u>if it was done</u> during Case evaluation.



2.3.1.3 Prescription Vital Signs Monitoring

Name
Prescription Vital Signs Monitoring
Responsible
Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. The signs that can be monitored are: Weight, Oxygen Saturation, Blood Pressure level, blood glucose level and Temperature. The data will be monitored by accessories and sent automatically back to the SACM. In case of devices not connected to the SMS (such as temperature) there will be a form to enter the data by the patient.

2.3.1.4 Pre-habilitation Prescription - physical or cognitive exercise

Name
Rehabilitation Prescription
Description
Physiotherapist or Occupational therapist instructions for physical or cognitive exercise
Responsible
Pre-habilitation Case Manager in Assuta hospital
CONNECARE Subsystem
SACM
Comments
Prehabilitation instructions will be given to the patient by the physiotherapist or the occupational therapist - physical or cognitive exercises. The data will be sent to the SMS. The patient will click a YES button after doing the exercise. All rehabilitation exercises except for walking.

2.3.1.5 Walking Activity Prescription

Name
Walking Activity Prescription
Responsible
Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS and monitored by FitBit bracelet.



2.3.1.6 Prescription Medication Adherence

Name
Prescription Medication Adherence
Responsible
Pre-habilitation Case Manager in Assuta hospital
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. The patient will click a YES button after taking the medication.

2.3.1.7 Nutritional Instructions

Name
Nutrition Instructions
Responsible
Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
SACM
Comments
The CM will enter to the SACM special instructions regarding nutrition – like No salt... The data will be sent to the SMS (VitalinQ).

2.3.1.8 Prescription Autocheck Health Status

Name
Prescription Autocheck Health Status
Responsible
Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. There are different autocheck forms depending on the patient's situation.

2.3.1.9 Social interventions

Name
Social Interventions proposal
Responsible
Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
SACM
Comments
The social worker decides on actions needed (either resumption of preexisting prior to hospitalization or new such as emotional support, motivational counselling), The CM will enter data to the SACM.



2.3.1.10 Calendar assignments

Name
Calendar assignments
Responsible
Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
SACM + SMS
Comments
The CM can enter to the SACM and the patient can enter to the SMS all the patient's appointments.

2.3.1.11 Education Prescription & Training for Patient and Caregiver

Name
Education Prescription & Training for Patient and Caregiver
Responsible
Pre-habilitation Case Manager in Assuta hospita
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. The education material and outline is standard so cannot be customized for each patient.

2.3.2 Definition of interventions during the hospitalization

2.3.2.1 Intervention prescribed by InterRAI or other interventions dictated by patient status post-surgery

Name
Intervention proposed by InterRAI
Responsible
Pre-habilitation Case Manager or hospital case manager in Assuta hospital
CONNECARE Subsystem
SACM & InterRAI
Comments
The CM will type here the recommendations of the Full InterRAI Geriatric screening <u>if it was done</u> during Case evaluation.



2.3.3 Definition of interventions post-hospitalization

2.3.3.1 Hospital Discharge Plan

Name
Hospital Discharge Plan
Responsible
Maccabi Case Manager in the hospital or in the community
CONNECARE Subsystem
SACM
Comments
The CM will enter information about diagnosis, medications, referrals and other important information. According to what is needed the CM will also use data from the discharge plan when setting other fields in the work plan definition (Medication, rehabilitation...).

2.3.3.2 Intervention prescribed by InterRAI

Name
Intervention prescribed by InterRAI
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM & InterRAI
Comments
The CM will perform a full InterRAI screen for every patient after he is at home. The CM will type here the recommendations of the Full InterRAI Geriatric screening.

2.3.3.3 Prescription Vital Signs Monitoring

Name
Prescription Vital Signs Monitoring
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. The signs that can be monitored are: Weight, Oxygen Saturation, Blood Pressure level, blood glucose level and Temperature. The data will be monitored by accessories and sent automatically back to the SACM. In case of devices not connected to the SMS (such as temperature) there will be a form to enter the data by the patient.



2.3.3.4 Rehabilitation Prescription - physical or cognitive exercise

Name
Rehabilitation Prescription
Description
Physiotherapist or Occupational therapist instructions for physical or cognitive exercise
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
Rehabilitation instructions which will be given to the patient by the physiotherapist or the occupational therapist - physical or cognitive exercises. The data will be sent to the SMS. The patient will click a YES button after doing the exercise. All rehabilitation exercises except for walking.

2.3.3.5 Walking Activity Prescription

Name
Walking Activity Prescription
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS and monitored by FitBit bracelet.

2.3.3.6 Prescription Medication Adherence

Name
Prescription Medication Adherence
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. The patient will click a YES button after taking the medication.

2.3.3.7 Nutritional Instructions

Name
Nutrition Instructions
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The CM will enter to the SACM special instructions regarding nutrition – like No salt... The data will be sent to the SMS (VitalinQ).



2.3.3.8 Prescription Autocheck Health Status

Name
Prescription Autocheck Health Status
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. There are different autocheck forms depending on the patient's situation.

2.3.3.9 Social interventions

Name
Social Interventions proposal
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The social worker decides on actions needed (either resumption of preexisting prior to hospitalization or new), The CM will enter data to the SACM.

2.3.3.10 Calendar assignments

Name
Calendar assignments
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM + SMS
Comments
The CM can enter to the SACM and the patient can enter to the SMS all the patient's appointments.

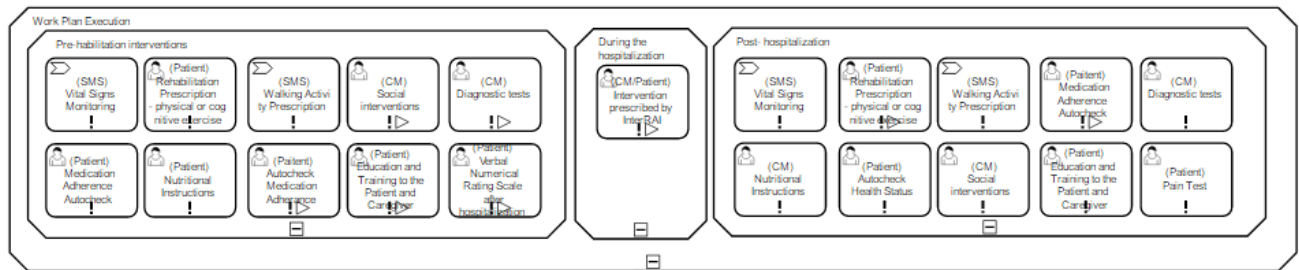
2.3.3.11 Education Prescription & Training for Patient and Caregiver

Name
Education Prescription & Training for Patient and Caregiver
Responsible
Maccabi Case Manager in the community
CONNECARE Subsystem
SACM
Comments
The data will be sent to the SMS. The education material and outline is standard so cannot be customized for each patient.



2.4 Work-plan Execution (Intervention execution)

All data transmitted to or entered into the SMS by the patient and/or his/her caregiver will be available to the Community Case manager and the Primary Care Physician



2.4.1 Execution of Pre-hospitalization interventions

2.4.1.1 Vital Signs Monitoring

The data will be obtained directly from the smart devices. The patient will be reminded to use the proper device corresponding with the prescription but no form will be showed to be filled. In case of devices not connected to the SMS (such as temperature) there will be a form to enter the data by the patient.

2.4.1.2 Rehabilitation Prescription - physical or cognitive exercise

The patient will have alerts in the SMS with the prescription and proper details. The patient will answer in the SMS app if he has done the exercise and how hard was it.

2.4.1.3 Walking Activity Prescription

The data will be obtained directly from the fitness trackers. The patient will receive a reminder to walk.

2.4.1.4 Medication Adherence Autocheck

The patient will have alerts in the SMS with the prescription and proper details, the patient will click a YES button after taking the medication.

2.4.1.5 Nutritional Instructions

The patient will enter data to his nutrition dairy in VitalinQ.

2.4.1.6 Autocheck Health Status

The patient will fill the form and the data will be sent to the SACM for the CM to review as necessary as will all other SMS data.

2.4.1.7 Social interventions

The CM/caregiver/patient will enter the status of the intervention that was entered to the SMS or SACM in the work plan definition.



2.4.1.8 Patient Education and Training to the Patient and Caregiver

This form collects the status of educational events.



2.4.1.9 Diagnostic tests

Name
Diagnostic tests
Responsible
Patient and Maccabi Case Manager in the community
CONNECARE Subsystem
SMS + SACM
Comments
The patient and the CM can enter the result of the test.

2.4.1.10 Pain Test

Name
Verbal Numerical Rating Scale after hospitalization
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
Numbered scale ranging from 0 to 10, where 0 corresponds to absence of pain and 10 to maximum pain intensity. The patient selects the number that better suits the intensity of the symptom. A value over 5 raises an alarm.

2.4.2 Execution of interventions during the hospitalization

2.4.2.1 Intervention prescribed by InterRAI or other interventions dictated by patient status post-surgery

The Hospital Case Manager in Assuta hospital will enter the status of the intervention that was entered to the SACM in the work plan definition.

2.4.3 Execution of interventions post-hospitalization

2.4.3.1 Vital Signs Monitoring

The data will be obtained directly from the smart devices. The patient will be reminded to use the proper device corresponding with the prescription but no form will be showed to be filled. In case of devices not connected to the SMS (such as temperature) there will be a form to enter the data by the patient.

2.4.3.2 Rehabilitation Prescription - physical or cognitive exercise

The patient will have alerts in the SMS with the prescription and proper details. The patient will answer in the SMS app if he had done the exercise and how hard was it.



2.4.3.3 Walking Activity Prescription

The data will be obtained directly from the fitness trackers. The patient will receive a reminder to walk.

2.4.3.4 Medication Adherence Autocheck

The patient will have alerts in the SMS with the prescription and proper details, the patient will click a YES button after taking the medication.

2.4.3.5 Nutritional Instructions

The patient will enter data to his nutrition dairy in VitalinQ.

2.4.3.6 Autocheck Health Status

The patient will fill the form and the data will be sent to the SACM for the CM to review as necessary as will all data entered into the SMS.

2.4.3.7 Social interventions

The CM/caregiver/patient will enter the status of the intervention that was entered to the SMS or SACM in the work plan definition

2.4.3.8 Patient Education and Training to the Patient and Caregiver

This form recollects the status of educational events.

2.4.3.9 Diagnostic tests

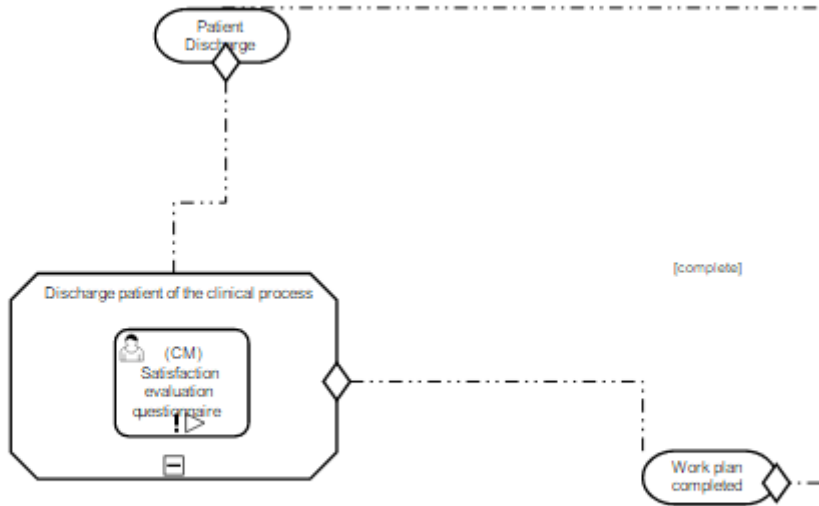
Name
Diagnostic tests
Responsible
Patient and Maccabi Case Manager in the community
CONNECARE Subsystem
SMS + SACM
Comments
The patient and the CM can enter the result of the test.

2.4.3.10 Pain Test

Name
Verbal Numerical Rating Scale after hospitalization
Responsible
Patient
CONNECARE Subsystem
SMS



2.5 Discharge



2.5.1 Satisfaction evaluation questionnaire

Name
Satisfaction evaluation questionnaire
Responsible
Patient
CONNECARE Subsystem
SMS
Comments
<TBD>



3. Data Collection

3.1 Case Identification

3.1.1 Basic criteria

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
BasicCriteria1	Basic criteria	Age	radio	Age > 70	1, No 0, Yes
BasicCriteria2	Basic criteria	Discharged	radio	Expected to be discharged back to the community	1, No 0, Yes
BasicCriteria3	Basic criteria	Maccabi member	radio	Maccabi member	1, No 0, Yes
BasicCriteria4	Basic criteria	Language	radio	The patient or his primary care giver can speak and read Hebrew or English	1, No 0, Yes

* In Assuta yes is default for all fields

3.1.2 ASA Physical Status Classification System

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
ASA1	Case identification – ASA	ASA Physical Status Classification System	radio	ASA PS Classification	1, ASA I: A normal healthy patient 2, ASA II: A patient with mild systemic disease 3, ASA III: A patient with severe systemic disease 4, ASA IV: A patient with severe systemic disease that is a constant threat to life 5, ASA V: A moribund patient who is not expected to survive without the operation 6, ASA VI: A declared brain-dead patient whose organs are being removed for donor purposes



3.1.3 Complexity of the patient

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
CCP	Complexity of the patient	Complexity of the patient	radio	The patient is diagnosed with at least one chronic disease	1, No 0, Yes

* In Assuta yes is default for all fields

3.1.4 Technological Test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
tech1	Technological Test	Maccabi online password	checkbox	The patient or his primary care giver has an active Maccabi online password	0, Neither has online password 1, Patient has online password 2, Care giver has online password 3, Both has online password
Tech2	Technological Test	basic technology experience	radio	The patient or his primary care giver has basic technology experience with mobile apps	0, Neither has experience 1, Patient has experience 2, Care giver has experience 3, Both have experience
Tech3	Technological Test	internet access	radio	The patient has home internet access (via WiFi or mobile 3G internet)	0, No 1, Yes

3.1.5 Patient's Consent

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
pConsent1	Patient's Consent	radio	The patient gave his consent to participate in the study	0, No 1, Yes In Assuta yes is default for all fields
pConsent2	Patient's Consent	Date	Date of consent	dd/mm/yyyy



3.2 Case Evaluation

3.2.1 Patient's data (automatically or manually typing)

Var. Name = Field Label	Form Name	Section Header	Field Type	Choices calculations
First_N	New Case	Personal info	Free Text	
Last_N	New Case	Personal info	Free Text	Not real name!!!
BDate	New Case	Personal info	Date	
P_Num	New Case	Personal info	Num	Serial number and not real ID
Age	New Case	Personal info	70 < Num < 120	
Gender	New Case	Personal info	radio	0, Female 1, Male
Marital Status	New Case	Personal info	Check box	0 single, 1 married, 2 divorced,3 widowed, 4 living with a partner
Socio-cultural level	New Case	Personal info	radio	
Education (No of years)	New Case	Personal info	Num	
Work status	New Case	Personal info	Check box	0, Pension 1, Part time worker 2, full time worker
Income supplement subsidy	New Case	Personal info	radio	0, No 1, Yes
Other social security subsidies	New Case	Personal info	radio	0, No 1, Yes
Email	New Case	Personal info	Free verified Text	
Phone_Num	New Case	Personal info	Free verified Text	
Mobile_Num	New Case	Personal info	Free verified Text	
Address	New Case	Personal info	Free verified Text	
Language	New Case	Personal info	radio	1 English, 2 Hebrew, 3 Spanish, 4 Dutch
Name and contact of Primary physician in the community	New Case	Personal info	Free Text	
Diagnosis	New Case	medical info	dropdown	There can be more than 8 diagnosis
Medications	New Case	medical info	dropdown	There can be more than 8 medications
Allergies	New Case	medical info	dropdown	
Other	New Case	medical info	Free text	



3.2.2 InterRAI Screen

Var. Name	Form Name	Section Header	Field Type	Choices /calculations
interRAI_screen_1	interRAI Screen	Cognitive skills in making daily decisions:	radio	0, Independent 1, Minor changes in independence
interRAI_screen_2	interRAI Screen	ADL tasks - Bathing	radio	0, Independent 1, need supervision 2, need more than supervision
interRAI_screen_3	interRAI Screen	ADL tasks - personal hygiene	radio	0, Independent 1, need supervision 2, need more than supervision
interRAI_screen_4	interRAI Screen	ADL tasks - Dressing a lower body part	radio	0, Independent 1, need supervision 2, need more than supervision
interRAI_screen_5	interRAI Screen	ADL tasks - Motions	radio	0, Independent 1, need supervision 2, need more than supervision
interRAI_screen_6	interRAI Screen	dyspnea	radio	0, Lack of symptoms 1, Does not exist at rest, but appears when performing moderate activity 2, Does not exist at rest, but appears when performing normal day-to-day activities 3, Exists at rest
interRAI_screen_7	interRAI Screen	Self-reported health status	radio	0. Excellent 1. Good 2. Reasonable 3. Not good 8. Can't (do not want) to answer
interRAI_screen_8	interRAI Screen	Stability of the subject - Situations / diseases cause cognitive instability	radio	0. NO 1. YES
interRAI_screen_9	interRAI Screen	Stability of the subject - severe event or a flare-up of a recurring or chronic	radio	0. NO 1. YES



		problem		
interRAI_screen_10	interRAI Screen	Stability of the subject - is expected to live six months or less.	radio	0. NO 1. YES
interRAI_screen_11	interRAI Screen	Self-reported mood	radio	0. NO 1. YES 2. Can't (do not want) to answer
interRAI_screen_12	interRAI Screen	Informal caregiver evaluation - Emotional distress, anger, or depression	radio	0. NO 1. YES
interRAI_screen_13	interRAI Screen	Informal caregiver evaluation - Emotional difficulty / overload	radio	0. NO 1. YES
interRAI_screen_result	interRAI Screen	result	Calc	Sum (interRAI_screen_1-12)

3.2.3 Full InterRAI Geriatric screening

TBD - The data to be fed into the SACM is not clear yet, whether all questions or just main subjects.

The suggestions of the Full InterRAI Geriatric screening will not be here but in work plan definition.

Var. Name	Form Name	Section Header	Field Type	Choices /calculations
interRAI-C	interRAI	Cognitive Status	TBD	Consists of 3 questions
interRAI-D	interRAI	Communication and vision	TBD	Consists of 4 questions
interRAI-E	interRAI	Mood	TBD	Consists of 2 questions
interRAI-F	interRAI	Satisfaction with the psycho-social situation	TBD	Consists of 5 questions
interRAI-G	interRAI	Functional status	TBD	Consists of 6 questions
interRAI-H	interRAI	In-continance	TBD	Consists of 1 questions
interRAI-I	interRAI	Diagnosis	TBD	Consists of 2 questions
interRAI-J	interRAI	Health conditions	TBD	Consists of 8 questions
interRAI-K	interRAI	Nutritional status	TBD	Consists of 1 questions
interRAI-L	interRAI	Medication	TBD	Consists of 2 questions



interRAI-M	interRAI	Medical treatments and procedures	TBD	Consists of 2 questions
interRAI-N	interRAI	Social relations	TBD	Consists of 1 questions
interRAI-o	interRAI	Evaluation of the environment	TBD	Consists of 1 questions
interRAI-p	interRAI	Discharge data	TBD	Consists of 2 questions
Interraingenericresult1	interRAI	Numeric result	Num	

3.2.4 Mini Mental Test [\(ENG\)](#)

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
MiniMental1	Mini Mental Test	Num	orientation	0 < Num < 5
MiniMental2	Mini Mental Test	Num	Instant memory	0 < Num < 3
MiniMental3	Mini Mental Test	Num	Concentration and calculus	0 < Num < 5
MiniMental4	Mini Mental Test	Num	language	0 < Num < 5
MiniMental5	Mini Mental Test	Num	Perform a three-step instruction	0 < Num < 3
MiniMental6	Mini Mental Test	Num	reading	0 < Num < 1
MiniMental7	Mini Mental Test	Num	writing	0 < Num < 1
MiniMental8	Mini Mental Test	Num	copying	0 < Num < 1
MiniMentalresult	Mini Mental Test	calc	Result	sum(MiniMental1-8)

3.2.5 Barthel test [\(ENG\)](#)

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Barthel1	Barthel test	Radio	FEEDING	0 = unable 5 = needs help cutting, spreading butter, etc. or requires modified diet 10 = independent
Barthel2	Barthel test	Radio	BATHING	0 = dependent 5 = independent (or in shower)
Barthel3	Barthel test	Radio	GROOMING	0 = needs to help with personal care 5 = independent face/hair/teeth/shaving (implements provided)
Barthel4	Barthel test	Radio	DRESSING	0 = dependent 5 = needs help but can do about half unaided 10 = independent (including buttons, zips, laces, etc.)



Barthel5	Barthel test	Radio	BOWELS	0 = incontinent (or needs to be given enemas) 5 = occasional accident 10 = continent
Barthel6	Barthel test	Radio	BLADDER	0 = incontinent, or catheterized and unable to manage alone 5 = occasional accident 10 = continent
Barthel7	Barthel test	Radio	TOILET USE	0 = dependent 5 = needs some help, but can do something alone 10 = independent (on and off, dressing, wiping)
Barthel8	Barthel test	Radio	TRANSFERS	0 = unable, no sitting balance 5 = major help (one or two people, physical), can sit 10 = minor help (verbal or physical) 15 = independent
Barthel9	Barthel test	Radio	MOBILITY	0 = immobile or < 50 yards 5 = wheelchair independent, including corners, >50 yards 10 = walks with help of one person (verbal or physical) > 50 yards 15 = independent (but may use any aid; for example, stick) > 50 yards
Barthel10	Barthel test	Radio	STAIRS	0 = unable 5 = needs help (verbal, physical, carrying aid) 10 = independent
BarthelScore	Barthel test	calc	TOTAL SCORE	sum(Barthel1-9)

3.2.6 EQ5D (ENG)

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
EQ5D1	EQ5D	Radio	MOBILITY	I have no problems in walking about I have slight problems in walking about I have moderate problems in walking about I have severe problems in walking about I am unable to walk about
EQ5D2	EQ5D	Radio	SELF-CARE	I have no problems washing or dressing myself I have slight problems washing or dressing myself I have moderate problems washing or dressing myself I have severe problems washing or dressing myself I am unable to wash or dress myself
EQ5D3	EQ5D	Radio	USUAL ACTIVITIES	I have no problems doing my usual activities I have slight problems doing my usual activities I have moderate problems doing my usual activities I have severe problems doing my usual activities I am unable to do my usual activities
EQ5D4	EQ5D	Radio	PAIN / DISCOMFORT	I have no pain or discomfort I have slight pain or discomfort I have moderate pain or discomfort I have severe pain or discomfort I have extreme pain or discomfort
EQ5D5	EQ5D	Radio	ANXIETY / DEPRESSION	I am not anxious or depressed I am slightly anxious or depressed I am moderately anxious or depressed I am severely anxious or depressed I am extremely anxious or depressed
EQ5D6	EQ5D	Num	YOUR HEALTH TODAY	0 < Num < 100

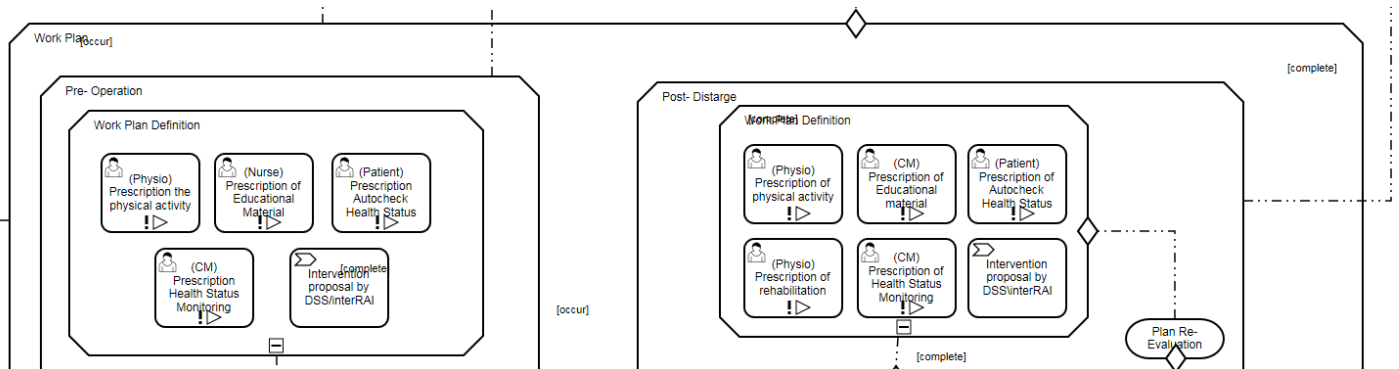


3.2.7 Health assessment by Surgical Department and/or Anesthesiologist

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
CDHealthAss	Health assessment by surgeon/anesthesiologist	DATE	Date	Date of assessment	Dd/mm/yyyy
CDHealthAss	Health assessment by surgeon/anesthesiologist	Diagnosis	Radio	Was there a change in the patient's diagnosis?	Yes No
CDHealthAss	Health assessment by surgeon/anesthesiologist	Diagnosis	dropdown	The complete new diagnosis	There can be more than 8 diagnosis per patient
CDHealthAss	Health assessment by surgeon/anesthesiologist	Medications	Radio	Was there a change in the patient's medication prescription?	Yes No
CDHealthAss	Health assessment by surgeon/anesthesiologist	Medications	dropdown	The complete new medication prescription	There can be more than 8 medications per patient
CDHealthAss	Health assessment by surgeon/anesthesiologist	Professional Referral	Radio	Was there any Referrals to professional staff?	Yes No
CDHealthAss	Health assessment by surgeon/anesthesiologist	Professional Referral	Checkbox	What referrals?	<ol style="list-style-type: none"> 1. specialized doctor 2. Physiotherapist 3. Nutritionist 4. Occupational Therapy 5. Diagnostic tests: lab, imaging, ECG
CDHealthAss	Health assessment by surgeon/anesthesiologist	Other	Free text	Is there other important information from the doctor's visit?	



3.3 Work-plan Definition



3.3.1 Definition of Pre-habilitation interventions

3.3.1.1 Pre-habilitation Plan

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
PrehabPlan	Pre-habilitation Plan	Surgery	Radio	The patient can undergo the surgery?	Yes No
PrehabPlan	Pre-habilitation Plan	Medications	Radio	IS there a change in the patient's medication prescription before surgery?	Yes No
PrehabPlan	Pre-habilitation Plan	Medications	dropdown	The complete new medication prescription	There can be more than 8 medications per patient
PrehabPlan	Pre-habilitation Plan	Professional Referral	Radio	Was there any Referrals to professional staff?	Yes No
PrehabPlan	Pre-habilitation Plan	Professional Referral	Checkbox	What referrals?	1. specialized doctor 2. Physiotherapist 3. Nutritionist 4. Occupational Therapy 5. Diagnostic tests
PrehabPlan	Pre-habilitation Plan	Social needs	Checkbox	Does the patient already have social help?	<TBD>
PrehabPlan	Pre-habilitation Plan	Special needs	Checkbox	Does the patient in need of special care?	<TBD> 1. Home care 2. MOMA ...
PrehabPlan	Pre-habilitation Plan	Other	Free text	Other important information?	



3.3.1.2 Intervention prescribed by InterRAI

The CM will type here the recommendations of the InterRAI resulting from the Case evaluation.

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Interrairresult2	interRAI	Textual Recommendations	Free text	

3.3.1.3 Prescription Vital Signs Monitoring

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Pvsm3	Vital Signs Monitoring	dropdown	Type of measurement	0, Weight 1, Oxygen Saturation 2, Blood Pressure 3, Heart rate 4, Temperature 5 Blood glucose level
Pvsm1	Vital Signs Monitoring	Date	Start date	
Pvsm2	Vital Signs Monitoring	Date	End date	
Pvsm3	Vital Signs Monitoring	Dropdown	Units of frequency:	0, Hours 1, Days 2, Weeks 3, months
Pvsm4	Vital Signs Monitoring	Text	Frequency per unit:	
Pvsm5	Vital Signs Monitoring	Num	Min. Threshold	The CM will get a notification when the result below
Pvsm6	Vital Signs Monitoring	Num	Max. Threshold	The CM will get a notification when the result is above

3.3.1.4 Pre-habilitation Prescription - physical or cognitive exercise

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
rehabPresc1	Rehab Prescription	dropdown	Type of exercise (Except for walking)	List of possible activities - TBD 0, Group meeting for training 1, Personal meeting for training 2, Hand grip ... 9, reading, cognitive games 10, climbing steps...
rehabPresc2	Rehab Prescription	Date	Start date	
rehabPresc3	Rehab Prescription	Date	End date	
rehabPresc4	Rehab Prescription	dropdown	Units of frequency:	0, Hours 1, Days 2, Weeks 3, months
rehabPresc5	Rehab Prescription	Num	Frequency per unit:	
rehabPresc6	Rehab Prescription	Num	Need to repeat the exercise __ times every session :	



3.3.1.5 Walking Activity Prescription

Var. Name	Form Name	Field Type	Field Label
physicalP1	Walking Activity Prescription	Date	Start date
physicalP2	Walking Activity Prescription	Date	End date
physicalP3	Walking Activity Prescription	Text	Number of steps daily
physicalP4	Walking Activity Prescription	Text	Intensity of the activity: Minutes of medium level activity daily.
physicalP5	Walking Activity Prescription	Text	Intensity of the activity: Minutes of high level activity daily.
physicalP6	Walking Activity Prescription	Text	Max. minutes without activity allowed daily.

3.3.1.6 Prescription Medication Adherence

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
MedPresc1	Prescription Medication Adherence	dropdown	Medication name/code	
MedPresc2	Prescription Medication Adherence	Date	Start date	
MedPresc3	Prescription Medication Adherence	Date	End date	
MedPresc4	Prescription Medication Adherence	dropdown	Units of frequency:	0, Hours 1, Days 2, Weeks 3, months
MedPresc5	Prescription Medication Adherence	Num	Frequency per unit:	
MedPresc6	Prescription Medication Adherence	Text	Special comments	

3.3.1.7 Nutritional Instructions

TBD Will there be a link between the SACM and the Vitalinq App so that instructions by the dietician can be incorporated? This can include special instructions such as "no salt", number of calories per day, number and size of meals per day, specific diet.....



3.3.1.8 Prescription Autocheck Health Status

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
autocheckP1	Autocheck Health Status Prescription	Dropdown	Type of questionnaire	0, Barthel 1, EQ5D 2, How do you feel today? 3, Did you eat today? 4, Did you leave the house today? ... TBD
autocheckP2	Autocheck Health Status Prescription	Date	Start date	
autocheckP3	Autocheck Health Status Prescription	Date	End date	
autocheckP4	Autocheck Health Status Prescription	Dropdown	Units of frequency	0, hours 1, days 2, weeks 3, months
autocheckP5	Autocheck Health Status Prescription	Text	Frequency	

3.3.1.9 Social interventions

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
SWInt	Social intervention	DATE	Date	Date of the meeting	Dd/mm/yyyy
SWInt	Social intervention	Intervention suggested	Checkbox	Intervention suggested:	<TBD>

3.3.1.10 Calendar assignments

The CM and the patient can enter to the SMS/SACM all the patient's appointments.

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Calander1	Calendar assignments	dropdown	Type of Meeting	1, specialized doctor 2,Physiotherapist 3, Nutritionist 4,Occupational Therapy 5, Other
Calander2	Calendar assignments	Date and time	Date and time	
Calander3	Calendar assignments	Text	Address	
Calander3	Calendar assignments	Text	Comments	

3.3.1.11 Education Prescription & Training for Patient and Caregiver

Var.	Form	Field Type	Field	Choices /calculations
------	------	------------	-------	-----------------------



Name	Name		Label	
educaDef1	education and training	Radio	Target population	0, patient 1, care giver 2, both
educaDef2	education and training	Dropdown	Education subject	0, Surgery or treatment 1, nutrition 2, rehabilitation 3, Physical activity 4, Smoking 5, about ConneCare 6, other
educaDef3	education and training	Dropdown	Type	0, Attached file 1, Link
educaDef4	education and training	attached file / hyper text	attach file / link	

3.3.2 Definition of interventions during the hospitalization

3.3.2.1 Intervention prescribed by InterRAI or other interventions dictated by patient status post-surgery

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Interrairresult2	interRAI	Textual Recommendations	Free text	

3.3.1 Definition of interventions post-hospitalization

3.3.1.1 Hospital Discharge Plan

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
HDPlan	Hospital discharge plan	Diagnosis	Radio	Was there a change in the patient's diagnosis during hospitalization?	Yes No
HDPlan	Hospital discharge plan	Diagnosis	dropdown	The complete new diagnosis	There can be more than 8 diagnosis per patient
HDPlan	Hospital discharge plan	Medications	Radio	Was there a change in the patient's medication prescription as a result of hospitalization?	Yes No



HDPlan	Hospital discharge plan	Medications	dropdown	The complete new medication prescription	There can be more than 8 medications per patient
HDPlan	Hospital discharge plan	Professional Referral	Radio	Was there any Referrals to professional staff?	Yes No
HDPlan	Hospital discharge plan	Professional Referral	Checkbox	What referrals?	6. specialized doctor 7. Physiotherapist 8. Nutritionist 9. Occupational Therapy 10. Diagnostic tests
HDPlan	Hospital discharge plan	Social needs	Checkbox	Did the patient have social help prior to hospitalization?	<TBD>
HDPlan	Hospital discharge plan	Special needs	Checkbox	Is the patient in need of special care?	<TBD> 3. Home care 4. Home hospitalization 5. MOMA 6. רעות להוסיף מהמצפן ומהתקציר של רחל
HDPlan	Hospital discharge plan	Other	Free text	Is there other important information?	

3.3.1.2 Intervention prescribed by InterRAI

The CM will type here the recommendations of the InterRAI as a result of Case evaluation.

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Interrairresult2	interRAI	Textual Recommendations	Free text	



3.3.1.3 Prescription Vital Signs Monitoring

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Pvsm3	Vital Signs Monitoring	dropdown	Type of measurement	0, Weight 1, Oxygen Saturation 2, Blood Pressure 3, Heart rate 4, Temperature 5 Blood glucose level
Pvsm1	Vital Signs Monitoring	Date	Start date	
Pvsm2	Vital Signs Monitoring	Date	End date	
Pvsm3	Vital Signs Monitoring	Dropdown	Units of frequency:	0, Hours 1, Days 2, Weeks 3, months
Pvsm4	Vital Signs Monitoring	Text	Frequency per unit:	
Pvsm5	Vital Signs Monitoring	Num	Min. Threshold	The CM will get a warning when the result below
Pvsm6	Vital Signs Monitoring	Num	Max. Threshold	The CM will get a warning when the result is above

3.3.1.4 Rehabilitation Prescription - physical or cognitive exercise

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
rehabPresc1	Rehab Prescription	dropdown	Type of exercise (Except for walking)	List of possible activities - TBD 0, climbing steps 1, Hand grip ... reading ...
rehabPresc2	Rehab Prescription	Date	Start date	
rehabPresc3	Rehab Prescription	Date	End date	
rehabPresc4	Rehab Prescription	dropdown	Units of frequency:	0, Hours 1, Days 2, Weeks 3, months
rehabPresc5	Rehab Prescription	Num	Frequency per unit:	
rehabPresc6	Rehab Prescription	Num	Need to repeat the exercise __ times every session :	



3.3.1.5 Walking Activity Prescription

Var. Name	Form Name	Field Type	Field Label
physicalP1	Walking Activity Prescription	Date	Start date
physicalP2	Walking Activity Prescription	Date	End date
physicalP3	Walking Activity Prescription	Text	Number of steps daily
physicalP4	Walking Activity Prescription	Text	Intensity of the activity: Minutes of medium level activity daily.
physicalP5	Walking Activity Prescription	Text	Intensity of the activity: Minutes of high level activity daily.
physicalP6	Walking Activity Prescription	Text	Max. minutes without activity allowed daily.

3.3.1.6 Prescription Medication Adherence

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
MedPresc1	Prescription Medication Adherence	dropdown	Medication name/code	
MedPresc2	Prescription Medication Adherence	Date	Start date	
MedPresc3	Prescription Medication Adherence	Date	End date	
MedPresc4	Prescription Medication Adherence	dropdown	Units of frequency:	0, Hours 1, Days 2, Weeks 3, months
MedPresc5	Prescription Medication Adherence	Num	Frequency per unit:	
MedPresc6	Prescription Medication Adherence	Text	Special comments	

3.3.1.7 Nutritional Instructions

TBD Will there be a link between the SACM and the Vitalinq App so that instructions by the dietician can be incorporated? This can include special instructions such as "no salt", number of calories per day, number and size of meals per day, specific diet.....

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Nutrition_Instru	Nutritional Instructions	dropdown	Special instructions	0. No Salt.... <TBD>



3.3.1.8 Prescription Autocheck Health Status

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
autocheckP1	Autocheck Health Status Prescription	Dropdown	Type of questionnaire	0, Barthel 1, EQ5D 2, How do you feel today? 3, Did you eat today? 4, Did you leave the house today? ... TBD
autocheckP2	Autocheck Health Status Prescription	Date	Start date	
autocheckP3	Autocheck Health Status Prescription	Date	End date	
autocheckP4	Autocheck Health Status Prescription	Dropdown	Units of frequency	0, hours 1, days 2, weeks 3, months
autocheckP5	Autocheck Health Status Prescription	Text	Frequency	

3.3.1.9 Social interventions

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
SWInt	Social intervention	DATE	Date	Date of the meeting	Dd/mm/yyyy
SWInt	Social intervention	Intervention suggested	Checkbox	Intervention suggested:	<TBD>

3.3.1.10 Calendar assignments

The CM and the patient can enter to the SMS/SACM all the patient's appointments.

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
Calander1	Calendar assignments	dropdown	Type of Meeting	1, specialized doctor 2,Physiotherapist 3, Nutritionist 4,Occupational Therapy 5, Other
Calander2	Calendar assignments	Date and time	Date and time	
Calander3	Calendar assignments	Text	Address	
Calander3	Calendar assignments	Text	Comments	



3.3.1.11 Patient and Caregiver Education and Training

Var. Name	Form Name	Field Type	Field Label	Choices /calculations
educaDef1	education and training	Radio	Target population	0, patient 1, care giver 2, both
educaDef2	education and training	Dropdown	Education subject	0, Surgery or treatment 1, nutrition 2, rehabilitation 3, Physical activity 4, Smoking 5, about ConneCare 6, other
educaDef3	education and training	Dropdown	Type	0, Attached file 1, Link
educaDef4	education and training	attached file / hyper text	attach file / link	



3.4 Work-plan Execution (Intervention execution)

3.4.1 Execution of Pre-habilitation interventions

3.4.1.1 Vital Signs Monitoring

The data will be obtained directly from the smart devices. The patient will be reminded to use the proper device corresponding with the prescription but no form will be showed to be filled. In case of devices not connected to the SMS (such as temperature) there will be a form to enter the data by the patient.

3.4.1.2 Rehabilitation Prescription - physical or cognitive exercise

The patient will have alerts in the SMS with the prescription and proper details. The patient will answer in the SMS app if he has done the exercise and how hard was it.

3.4.1.3 Walking Activity Prescription

The data will be obtained directly from the fitness trackers. The patient will receive a reminder to walk.

3.4.1.4 Medication Adherence Autocheck

The patient will have alerts in the SMS with the prescription and proper details, the patient will click a YES button after taking the medication.

3.4.1.5 Nutritional Instructions

The patient will enter data to his nutrition dairy in VitalinQ.

3.4.1.6 Autocheck Health Status

The patient will fill the form and the data will be sent to the SACM for the CM to review as necessary as will all other SMS data.

3.4.1.7 Social interventions

The CM/caregiver/patient will enter the status of the intervention that was entered to the SMS or SACM in the work plan definition.

3.4.1.8 Patient Education and Training to the Patient and Caregiver

This form collects the status of educational events.



3.4.1.9 Diagnostic tests

The data will be sent to the SMS, the patient and the CM can enter the result of the test.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
DiagTest	Diagnostic tests	DATE	Date	Date of the test	Dd/mm/yyyy
DiagTest	Diagnostic tests	Type	Checkbox	Name of test	<TBD>
DiagTest	Diagnostic tests	Result	Num	Result	
DiagTest	Diagnostic tests	Result	Radio	Positive or Negative	1, Positive 2, Negative
DiagTest	Diagnostic tests	Comments	Free text	Comments	

3.4.1.10 Pain Test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
EVA0	Work-plan Execution – Pain Test EVA	Pain Test EVA			

3.4.1 Execution of interventions during the hospitalization

3.4.1.1 Intervention prescribed by InterRAI or other interventions dictated by patient status post-surgery

The Case Manager in Assuta hospital enter the status of the intervention in accordance with what was entered to the SACM in the work plan definition.

3.4.1 Execution of interventions post-hospitalization

3.4.1.1 Vital Signs Monitoring

The data will be obtained directly from the smart devices. The patient will be reminded to use the proper device corresponding with the prescription but no form will be showed to be filled. In case of devices not connected to the SMS (such as temperature) there will be a form to enter the data by the patient.



3.4.1.2 Rehabilitation Prescription - physical or cognitive exercise

The patient will have alerts in the SMS with the prescription and proper details. The patient will answer in the SMS app if he has done the exercise and how hard was it.

3.4.1.3 Walking Activity Prescription

The data will be obtained directly from the fitness trackers. The patient will receive a reminder to walk.

3.4.1.4 Medication Adherence Autocheck

The patient will have alerts in the SMS with the prescription and proper details, the patient will click a YES button after taking the medication.

3.4.1.5 Nutritional Instructions

The patient will enter data to his nutrition dairy in VitalinQ.

3.4.1.6 Autocheck Health Status

The patient will fill the form and the data will be sent to the SACM for the CM to review as necessary as will all other SMS data.

3.4.1.7 Social interventions

The CM/caregiver/patient will enter the status of the intervention that was entered to the SMS or SACM in the work plan definition.

3.4.1.8 Patient Education and Training to the Patient and Caregiver

This form collects the status of educational events.

3.4.1.9 Diagnostic tests

The data will be sent to the SMS, the patient and the CM can enter the result of the test.

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
DiagTest	Diagnostic tests	DATE	Date	Date of the test	Dd/mm/yyyy
DiagTest	Diagnostic tests	Type	Checkbox	Name of test	<TBD>
DiagTest	Diagnostic tests	Result	Num	Result	
DiagTest	Diagnostic tests	Result	Radio	Positive or Negative	1, Positive 2, Negative
DiagTest	Diagnostic tests	Comments	Free text	Comments	



3.4.1.10 Pain Test

Var. Name	Form Name	Section Header	Field Type	Field Label	Choices /calculations
EVA0	Work-plan Execution – Pain Test EVA	Pain Test EVA			



6.3 Evaluation form for the 1st PDSA cycle



CONNECARE

WP2

PDSA Evaluation Form

H2020-EU.3.1: Personalised Connected Care for Complex Chronic Patients

Project No. 689802

Start date of project: 01-04-2016

Duration: 42 months

Project funded by the European Commission, call H2020 – PHC - 2015	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
<input checked="" type="checkbox"/> CO	Confidential, only for members of the consortium (including the Commission Services)

Revision: 01

Date: 14-03-2017



Document Information

Project Number	689802	Acronym	CONNECARE
Full title	Personalised Connected Care for Complex Chronic Patients		
Project URL	http://www.CONNECARE.eu		
Project officer	Hubert Schier		

Deliverable	Number	--	Title	--
Work Package	Number	WP2	Title	Co-design of Integrated Care

Date of delivery	Contractual		Actual	
Nature	Prototype <input type="checkbox"/> Report <input checked="" type="checkbox"/> Dissemination <input type="checkbox"/> Other <input type="checkbox"/>			
Dissemination Level	Public <input type="checkbox"/> Consortium <input checked="" type="checkbox"/>			

Responsible Author	Jordi de Battle	Email	jordidebattle@gmail.com
Partner	IRBLL	Phone	

Abstract	This document presents the evaluation form that will be used at the end of each PDSA cycle to validate the corresponding cycle.
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Executive Summary

As described in the D2.1 “Cook-book for project development”, for each of the 3 CONNECARE case studies a set of PDSA cycles will be conducted at each deployment site (Catalonia, Israel, and the Netherlands), with the exception of case study 3, that will only be developed in Catalonia (Hospital Clinic). However, each of these PDSA cycles will have a common framework designed to ensure the correct application of PDSA principles and generate the desired outcomes. As stated in D2.1, the main driving features will be: (i) use of iterative cycles; (ii) test of change; (iii) small-scale testing; (iv) use of data over time; and, (v) appropriate documentation.

Accordingly, before the initiation of PDSA cycles working groups have been created to facilitate the success of the PDSA strategy. Working team participants and results from each working team meeting are reported and the corresponding documents shared in the Redmine¹.

This document presents the evaluation form that has been defined and that will be used in each site and for each case study at the end of each PDSA cycle². Although this core evaluation form will be used in each PDSA cycle, additional modules will be incorporated to assess to-be-developed CONNECARE features.

¹ <https://repository.eurecat.org/projects/connecare/documents>

² Due to the peculiarities of the hospital in Maccabi that is currently under development, working teams in Israel do not include medical staff yet and thus Israel will waive the 1st PDSA cycle evaluation.



1. Evaluation Form

Implementation study		Site	
Cycle	Start date	End date	

Patients and professionals' engagement and perspectives			
1. All the professionals participating in the site study management were involved:			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 Strongly disagree Strongly agree			
2. Your contributions have been taken into account in the design process:			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 Strongly disagree Strongly agree			
3. The working methodology so far has been appropriate:			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 Strongly disagree Strongly agree			
4. At this point, the site study would fulfill the professionals' expectations:			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 Strongly disagree Strongly agree			
5. At this point, the site study would fulfill the patients' expectations:			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 Strongly disagree Strongly agree			
New care models and supporting technology			
1. The site study workflow is well-defined:			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 Strongly disagree Strongly agree			
2. The proposed stratification and risk assessment tools could improve daily clinical practice:			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 Strongly disagree Strongly agree			



3. The deployment of the new care model could improve daily clinical practice:

1 2 3 4 5 6 7 8 9 10
Strongly disagree Strongly agree

4. The proposed technological solutions could improve daily clinical practice:

1 2 3 4 5 6 7 8 9 10
Strongly disagree Strongly agree

5. The proposed technological solutions would cover all your expected needs:

1 2 3 4 5 6 7 8 9 10
Strongly disagree Strongly agree

Safety, ethical, and legal aspects

1. The new care model would not endanger the professionals or patients:

1 2 3 4 5 6 7 8 9 10
Strongly disagree Strongly agree

2. You do not perceive threats concerning how the information in the supporting technological systems will be handled:

1 2 3 4 5 6 7 8 9 10
Strongly disagree Strongly agree

Maturity of the technology

1. The new care model is ready to be deployed at your working site:

1 2 3 4 5 6 7 8 9 10
Strongly disagree Strongly agree

2. The proposed workflow is ready to be deployed at your working site:

1 2 3 4 5 6 7 8 9 10
Strongly disagree Strongly agree

3. The proposed technological support is ready to be used at your working site:



<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 Strongly disagree Strongly agree
4. The new care model is ready to be deployed in other than the CCP protocol sites:
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 Strongly disagree Strongly agree



2. Conclusions

The 1st PDSA cycle will finish on March 31st, 2017. The evaluation form presented in this document will be used to evaluate that cycle and as starting point for the next one.