ICT Policy Support Programme
Call 3 objective 1.3 ICT for ageing well / independent living

Grant Agreement No. 250505

inCASA

Integrated Network for Completely Assisted Senior citizen's Autonomy

D6.1 inCASA European Pilot: aims,sample,methodology

Jo Fursse (CHC)

Document file: D6.1 inCASA European Pilot Aims Sample Methodology_v1.4

Work package: WP6 Pilot

Task: D6.1

Document responsible: CHC

Document history:

Version	Author(s)	Date	Changes made
1.0	Jo Fursse (CHC)	05-12-2010	Expected content and document structure definition
1.1	Pelayo Benito	20/01/2012	FHC
1.1	Dr. Sotirios Patsilinakos Konstantinos Papadopoulos, George Lamprinakos	25-1-2012	KGHNI pilot contribution
1.1	Alexandre Arbaud	07/02/2012	INSERM pilot contribution
1.1	Jo Fursse	15/02/2012	CHC Contribution
1.2	Jo Fursse	28/04/2012	Update based on Data meeting
1.3	Jo Fursse	06/05/2012	Update based on Reviewers Comments
1.4	Pelayo Benito	08/08/2012	Update to FHC pilot
1.4	Kostas Papadopoulos (NTUA)	08/08/2012	Update KGHNI pilot contribution
1.4	Alexandre Arbaud	08/08/2012	Update INSERM pilot contribution
1.4	Gianfranco Tarabuzzi	08/08/2012	ATC Pilot Contribution
1.4	Jo Fursse	13/08/2012	Update CHC Contribution
1.4	Jo Fursse	13/08/2012	Update Deliverable

Peer review history:

Reviewed by	Date	Comments
Trine F. Sørensen	03/05/2012	Minor comments.

Version **Error! Reference source not found.**4   2

Index

List of tables

.

Version **Error! Reference source not found.**4   3

20/08/2012

Executive summary

The main objective of the inCASA project is develop an integrated health and social service model enabled by technology that will support the aging population and facilitate them to stay well within their own homes. The target group for inCASA is frail elderly people who would benefit from the inCASA platform. This frail user is typically someone who suffers from a chronic disease such as diabetes, chronic heart failure, chronic obstructive pulmonary disease, cancer or hypertension and/or someone who suffers from loneliness or is in need of practical assistance in the home (home automation technologies) in order to increase their home safety and autonomy

Each of the five pilot sites involved in the inCASA project have at their core the aim to integrate service that will support improving quality of life for the end users / patients who are involved in their pilot.

The purpose of the inCASA evaluation is to measure the integrated service models against the aims of the inCASA proposition as well as the individual aims and objectives of each pilot. Identifying common evaluation domains and measures amongst the five different pilot sites has been challenging. A methodology approach was chosen that would enable pilots to undertake an evaluation that would provide comparable results, while acknowlding the specific aims and objectives of the individual pilots

The stakeholders that will contribute to the evaluation will consist of both professional users of the service such as clinicians and social services as well as the home users such as a patient, informal or formal home carer.   Data will be captured from many different sources and will involve multiple data collection methods.

This deliverable combines D2.7 Methodology and metrics evaluation which was moved from WP2 to WP6 and D6.1 inCASA European Pilots Aims, Sample and Methodology. The former was to describe the methodology and metrics evaluation. The latter was to identify common strategic basis for the wider application of the inCASA solution and the evaluation of the impact of the inCASA solution on the end users (both the health and social care professional and on the frail quality of life). It was decided to merge the two deliverables as it was felt that they were better described within the one document.

The combined deliverable provides a framework for the evaluation of inCASA. It provides a set of common elements that will be used to report the outcomes from each individual pilot. The output of this document will be used to support D6.5 Trial Data Progress Reports due in M30 and D6.6 Pilot Evaluation Report due in M36.

Version **Error! Reference source not found.**4   4

20/08/2012

1 Introduction

1.0 Aims

InCASA aims at developing an integrated health and social service model supported by technology that will support the aging population and facilitate them to stay well at their own homes, by mean of this specific objective:

- Providing elderly people with means to profile their habits, while they are at home,
- Providing elderly people (and patients with special needs) with means to monitor their health conditions outside traditional healthcare environments,
- Providing doctors and health professionals with more comprehensive monitoring data for understanding remote user's social/physical conditions and diagnostics.
- Enabling continuity of care through a wider interaction between elderly people and caretakers, especially including not just health specialists but also relatives or people who has close social relations with the user;
- Integrating home automation in a system permitting remote control of electronic devices in the immediate surroundings.

Each of the pilot sites has their own specific aims and objectives which are detailed later in the document. The table below summarises each pilot sites specific aim.

Table 1: inCASA Pilot Aims

Partner	Country	Integration	Aim
ATC	Italy	Social / Health	ATC seeks to incorporate the concepts, values and standards of inCASA solution into the organisational structure and culture of the local environment, improving the quality of life of Italian frail elderly people and the quality of work of socio-medical professionals, supporting healthy environments and actively cooperating with the social and healthcare community.
CHC	UK	Primary Care / Social	The Chorleywood pilot aims to develop an integrated service delivery model that will combine health and social care to identify and respond to the needs of frail older people with long term conditions in order to enable them to remain in their own homes for longer.
INSERM	France	Hospital / Social	The INSERM pilot aims to develop a service of technologies for cancer patients focused on their habits in their daily life and the evolution of different physiological parameters that may be affected by the disease and / or treatment. This will result in improved quality of life and patient prognosis through facilitating health care coordination, controlling patient symptoms and enhancing circadian robustness.
KGHNI	Greece	Hospital / Social	The aim of the KGHNI pilot is to integrate social and health services in order to support patients with Congestive Heart Failure and co-morbidities who live in their own home. The integrated KGHNI services are designed to complement the established medical services and aim to provide doctors early signs of a patient's deterioration (clinical) to enhance the patients' quality of life (psychologically, functional-wise in home and in everyday activities).
FHC	Spain	Hospital / Social	The FHC pilots aims to integrate social and health services in order to delay deterioration by promoting and monitoring rehabilitation exercise at home as well as providing additional support for social needs for those patients that live at distance from the hospital.

Version **Error! Reference source not found.**4   5

20/08/2012

1.1 Purpose of the Evaluation

The purpose of the inCASA evaluation is to measure the integrated service models against the aims of the inCASA proposition.   The evaluation framewok which has been developed for inCASA and is described in section 2, has been based on a validated methodology which will support the measurement of the evaluation indicators.

The evaluation will assess the services from the perspective of the stakeholders and organisations involved in the service and will involve multiple data collection methods inlcuding interviews, questionnaires, record review, and economical analysis.

A minimum of 6 months worth of evaluation data will be collected by each of the pilots. An intermediate report with the evaluation of the case studies and recommendations for further improvement of the system will be issued in Month 30 of the project

1.2 Stakeholders / Sample

The target group for inCASA is frail elderly people who would benefit from the inCASA platform. This frail user is typically someone who suffers from a chronic disease such as diabetes, chronic heart failure, chronic obstructive pulmonary disease, cancer or hypertension and/or someone who suffers from loneliness or is in need of practical assistance in the home (home automation technologies) in order to increase their home safety and autonomy.

The stakeholders considered for the evaluation are the same as those defined in Deliverables 2.1 and 2.5.   The stakeholders consist of both professional users of the service such as clinicians and social services as well as the home users such as a patient, informal or formal home carer.   Table ? describes the different stakeholders that will participate in the evaluation. Each stakeholder will contribute in a different way to the validation of the service and evaluation.

Table 2: inCASA Stakeholders

Stakeholder	Description
End User / **Informal Carer**	The person or carer of person using the service in their home. • Patient • User • Relative • Unpaid carer
Service Provider	Professional user of the service including: • Clinicians • Social Workers • Technicians • Call Handlers • Administrative Support • Other Providers
Organisation	Organisations involved in delivering the service including: • Health • Social • Other Organisations

Version **Error! Reference source not found.**4   6

20/08/2012

1.3 Sample

The following table descibes users that will be included in the evaluation by each pilot site. All pilot sites will involve integrating health and social services.

Table 3: inCASA Sample

	Users	Social	Clinical (Disease)				Organisational Setting		
		Telecare	Hypertension	COPD	CHF	Cancer	Hospital	Primary Care	Social Care
INSERM	30	X				X	X		X
KGHNI	25	X			X		X		X
ATC	20	X						X	X
FHC	32	X		X			X		X
CHC	25	X	X	X	X			X	x

1.4 Expected outcomes of the Evaluation

The evaluation will demonstrate the effectiveness of the service adopted in each of the pilots and of the inCASA soultion as a whole. It will validate profiles, showing behaviour and normal range, and correct functionalities in alerts and communication workflows areas. This will significantly help in defining a sustainable approach to European citizen's profiling that can be improve the quality of Social and Health Care across countries.

Integrated monitoring of both the individual and the home environment will reduce voluntary hospitalisation, because elderly people living home alone will have increased self-confidence and trust the deployed services.

The evaluation will reflect the desired outcomes of the inCASA solution:

1. Highlight strength and opportunities of the inCASA solution, based on the real world experiences, to improve the proposal
2. Gather data to evaluate its impact on the healthcare and social care services and on the frails quality of life.
3. Set up and optimize procedures related to the service
4. Evaluate the impact of the system on the involved actors through user satisfaction survey
5. Evaluate the relationship between the system and the elderly population in terms of acceptability, safety perceptibly, quality and usability of the monitoring system
6. Evaluate the relationship between the system and the social worker in terms of usability, and its effectiveness, efficiency and satisfaction
7. Evaluate the impact of the solution on organisational efficiency of an integrated social and health care model
8. Gather basic data for behavioural models for the targeted population

1.5 Purpose and content of this deliverable

Deliverable 6.1 is an output from WP6, Pilot Use Cases. This deliverable describes the aims, methods, sample and evaluation framework that will be used in the evaluation of the inCASA project. The document was developed in consultation with all the Pilot sites through a series of face to face meetings, conference calls and emails.

Version **Error! Reference source not found.**4   7

The results of the evaluation will be published in D6.6 Pilot Evaluation Report. The document will also support D6.5 Trial Data Progress Report in month 30.

1.6 Outline of this deliverable

Section 2 of this document begins by describing the Methodology chosen for the evaluation. It then goes on to describe the considerations given to deciding on what measures to include in the evaluation in order to support the defined outcomes of inCASA as whole as well as those aims and objectives that are pilot site specific. . The inCASA evaluation framework is then presented.

Section 3 describes the aims and objectives of each pilot site, the sample that will be included in the evaluation and how the inCASA evaluation framework will be organised within each site. The framework reflects the stakeholders within the individual pilots, the data that will be collected and how it will be collected. In addition to the agreed common minimum dataset, the framework includes any site specific additional evaluation information that will be collected.

Version **Error! Reference source not found.**4   8

20/08/2012

2 Methodology

A methodology approach was chosen that would enable pilots to undertake an evaluation that would provide comparable results, while acknowlding the specific aims and objectives of the individual pilots.

MAST [1] was developed in 2010 through user and stakeholder workshops and on the basis of a systematic literature review. One of the main barriers to the adoption of telecare and telehealth has been the lack of quality evidence of its effectiveness. The MAST methodology provides a framework for assessing the effectiveness of telemedicine applications as well as supporting decision makers in choosing whether to invest or use new telemedicine applications. At the centre of the methodology are the users and their needs. It is currently being used in the European project Renewing for Health [2] which involves 9 regions across Europe.

MAST proposes 9 domains that might be included in an assessment. These include.

1. Health / social problem and characteristics of the application   } background

2. Safety (adverse effects)
3. Clinical effectiveness
4. Patient perspectives   } Assessment of outcomes
5. Economic aspects
6. Organisational aspects

7. Socio-cultural, ethical and legal aspects   }   Broader societal issues

The strength of MAST is that it provides a validated, robust and evidence based common overarching framework to guide evaluation. It proposes that pilots can decide which domains are applicable and then agree a minimum common data that will be collected which can be comparable across all sites. In addition, by choosing a methodology that is being used within other European pilots will result in data that is comparable across projects, thus adding the growing evidence base across Europe and wider.

2.0 Considerations in identifying common measures

Identifying common evaluation domains and measures amongst the five different pilot sites has been challenging. The following describes some of the main points that have been considered when choosing the measures.

1. **Integrating Health and Social Organisations**
   inCASA covers five different countries, each with their own different populations and different ways of delivering and managing health and social care. Four of the five pilot sites are based in clinical settings; however, only Chorleywood Health Centre is based in primary care, the remainder are in Hospital care. ATC focuses solely on Social Care. The challenges that each pilot have faced in attempting to bring together other organisations to participate and integrate services have been challenging.

2. **Technology Challenges**
   The technology that is being used will not necessarily be the same. For some pilots the technology is in development and is being tested within the pilots during the pre-pilot phase. All sites are using the technology for the first time, while they may have previous experience of using telehealth or telecare they will not have used the devices and equipment before. Even

for those pilots that are using a subset of the same equipment and devices, they are using it and customising it to fit their own specific pilot.

3. **Levels of Experience**
   Some pilot sites do not have previous experience using Telehealth and or Telecare and none have experience combining both.

4. **Availability of Resources**
   Each site has limited number of resources. Each pilot site is managing their resources differently. Some have outsourced elements of the pilot such as installing equipment, while others are utilising clinical, technical and research staff to assist.

5. **Small sample sizes**
   All of the pilot sites are monitoring small numbers of people. Considerations have had to be made to understand how best to capture useful and valuable information that can be used to inform service delivery, future business cases and further research.

6. **Project Delays**
   As with many projects, each of the pilot sites has faced significant delays in the start of the pilot. Delays often lead to uncertainties and concern for those taking part. Organisations that are investing time in planning and resourcing find themselves having to replan repeatedly. In some cases this has meant that staff have come and gone and that patients who had been recruited are no longer able to continue.

2.1 Domains considered for inCASA evaluation

An evaluation workshop was held in October 2011 with all of the pilot sites. Kidohlm from the Renewing Health Project presented the MAST Methodology. Pilots sites reviewed the different domains and agreed a minimum dataset to be included within each that would would meet the outcomes of inCASA . By agreeing this minimum common dataset, data will be comparable with all pilots.

 The following domains were selected.

1. **End User** / **Patient** / **Carer Perception**
   This will include measures of self-reported quality of life, satisfaction with new health and social service provision, technology and willingness to pay.

2. **Social** / **Healthcare Professional** / **Other Provider Perception**
   This will focus on the impact to the social and health care professional, including satisfaction impact on workload and experience with technology.

3. **Organisational Change** / **Service Model Aspects**
   This will focus on the impact of the inCASA solution on health and social organisations including impact on resource utilisation, case management, change in care and organisational pathways. It will also provide information for business models and sustainability of the service model.

4. **Intervention / Clinical Effectiveness**
   This will cover the types of clinical and social interventions undertaken, who they were taken by and outcomes.

5. **Economic Aspects**

Version **Error! Reference source not found.**4 10

20/08/2012

This will focus on measuring changes to the cost of providing health and social care within each pilot site as a result of the integrated service model. This will include the costs of changes to resource usage by patients / end users as well as the investment in hardware, software, education and general running costs of delivering the integrated service.

6. **Safety Aspects**
   Levels of safety and adverse effects

2.2 Evaluation Framework

The following table illustrates the overall inCASA evaluation framework. The framework describes what is being measured within each domain, the stakeholder from whom the information will be gathered and the method of data collections.

Table 4: inCASA Evaluation Framework

Patient Perception

Indicator	Stakeholder	Data source / method	Domain
Quality of Life / Wellbeing	End User / Patient / Informal Carer	Questionnaire Interviews	Patient Perception
Perception of Service Usability Reliability Integration Timeliness Privacy	End User / Patient / Informal Carer	Questionnaire Interviews	Patient Perception

Perception of Technology
  Usability
  Reliability
  Integration
  Privacy
	End User / Patient / Informal Carer	Questionnaire Interviews Contact Logs Installation Records	Patient Perception

Clinical Outcomes	End User / Patient / Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception
Health and Social Resource Usage Integration	End User / Patient / Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception

Service Provider / Professional Perception

Indicator	Stakeholder	Data source / method	Measure
Perception of Service Workload Usability Reliability Integration Timeliness Privacy	Clinicians Social Workers Call Handlers Administrative Support Other Providers	Questionnaire Interviews Logs Records	Service Provider / Professional Perception
Perception of Technology Usability Reliability Integration Privacy	Clinicians Social Workers Technicians Call Handlers Administrative Support Other Providers	Questionnaire Interviews Logs Records Training records	Service Provider / Professional Perception
Clinical Outcomes	Clinician Social Wokers Other Providers	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception

Version **Error! Reference source not found.**4 11

Health and Social Resource Usage Integration	Clinician Social Workers Adminstrative Support Other Providers	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception

Organisational Change / Service Model Aspects

Indicator	Stakeholder	Data source / method	Measure
Resource Usage Social care usage Hospital admissions GP and out of hours service contacts Case manager contacts Emergency Visits	Organisation / Provider Clincian Social Workers Technician Call Handlers Other Providers Patient / End User	Logs Records Interviews Questionnaires	Organisational Change / Service Model Aspects
Service Integration	Organisation / Provider Clincian Social Workers Call Handlers Other Providers Patient / End User	Referrals between organisations Questionnaire Interviews Logs	Organisational Change / Service Model Aspects
Business Models / Pathway Redevelopment	Organisation / Provider Clincian Social Workers Other Providers	Logs Records Interviews Questionnaires	Organisational Change / Service Model Aspects

Clinical Effectivness

Indicator	Stakeholder	Data source / method	Measure
Resource Usage Social care usage Hospital admissions GP and out of hours service contacts Case manager contacts Emergency Visits	Organisation / Provider Clincian Social Workers Call Handlers Other Providers Patient / End User	Logs Records Interviews Questionnaires	Clinical Effectivness
Health Interventions Number Types Social Interventions Number Types	Organisation / Provider Clincian Social Workers Other Providers Patient / End User	Record / Case Review Questionnaires	Clinical Effectivness
Clinical Change Clinical Variables	General Practitioners	Record	Clinical Effectivness

Econmic Aspects

Indicator	Stakeholder	Data source / method	Measure
Running costs of delivering the telemedicine service Time used by provider staff Rental / purchase of equipment / software Time used by end user	Organisation / Provider Clincian Social Workers Other Providers End user ./ informal carer / patient	Logs Records	Economic Aspects

Version **Error! Reference source not found.**4 12

Effects on patients use of health care:
   Social care usage
   Hospital admissions
   GP and out of hours service contacts
   Case manager contacts
   Emergency Visits
	Organisation / Provider
	Clincian
	Social Workers
	Other Providers
	End user ./ informal carer / patien
		Logs
		Records
			Economic Aspects

Safety Aspects

Indicator	Stakeholder	Data source / method	Measure

Adverse Effects
   Service
   Technical
   Integration
	Clinicians
	Social Workers
	Technicians
	Call Handlers
	Administrative Support
	Other Providers
		Logs
		Records
		Interviews
		Questionnaires
			Safety

2.3 Methods

Data will be captured from many different sources and will require multiple data collection methods. The choice of methods will depend on the variable to be measured, the source and resources available. For the same variable, the methods maybe different dependent on the pilot site.

Methods will include:
- Validated Questionnaires which can be self administered, delivered by the system or where apllicable completed with the recipient.
- Interviews with key stakeholders will be understaken to gather more indepth information about the integrated service or where data may not be collected automatically.
- Record and Case Reviews will be undertaken to gather and logs.
- System Data: Other data will be colleted direct from the system itself such as number of

Version **Error! Reference source not found.**4 13

20/08/2012

3 Description of Individual Pilot Site Aims, Sample and Evaluation Framework

The following section describes the aims and objectives of each pilot site, the sample that will be included in the evaluation and how the inCASA evaluation framework will be organised within each site. The framework reflects the stakeholders within the individual pilots, the data that will be collected and how it will be collected. In addition to the agreed common minimum dataset, the framework includes any site specific additional evaluation information that will be collected.

3.0 Agenzia Territoriale per la casa della Provincia di Torino (ATC), Italy Pilot

3.0.1 Aims and Objectives

ATC seeks to incorporate the concepts, values and standards of inCASA solution into the organisational structure and culture of the local environment, improving the quality of life of Italian frail elderly people and the quality of work of socio-medical professionals, supporting healthy environments and actively cooperating with the social and healthcare community. It will provide local authorities with an opportunity to contribute to the public health agenda, incorporating health promotion as a daily work activity.

ATC will integrate both health and social territorial services. This will be possible through the direct involvement of local social and healthcare authorities with the mediation of ICT and Innovation local authorities.

The service implemented will profile user habits in order to automatically identify anomalous situations and send alerts to the user, carers and service providers. ATC will monitor both behavioural parameters, e.g. movement, contact and home environment parameters, e.g. gas/water leaks and room temperature as well as health parameters such as blood pressure and weight in order to establish an alert system.   The service will also profile user habits. Any significant deviations from the Habits Model will generate an alert that requires a defined action by a designated person (e.g. case manager, clinician or social worker).

For the Italian environment these activities can be an essential part of social and healthcare work, with the increasing prevalence of lifestyle-related and chronic diseases. Profile driven therapeutic education (single case focused), strategies enabling patients to take an active role in chronic disease-management or motivational counseling, can support better healthcare outcomes. Social services involvement will contribute also to the maintenance and the improvement of the social contacts and the social relations between elderly people who will have many opportunities to meet with other persons of their age, and develop various activities and interests, and outcomes will be easily monitored through inCASA integration.

The objectives for the ATC pilot are:
- improving elderly people's quality of life
- promote remote health monitoring
- implement home automation services
- improve relations with neighbours

Version **Error! Reference source not found.**4 14

20/08/2012

3.0.2 Sample

A total of 20 end-users will be involved who have been identified to be at risk of loneliness or who have safety or autonomy issues.

The targeted groups of tenants are:
- Senior citizens over 65 self-sufficient that require light support by professional to improve their autonomy in addition to or in replacement of the family network (where absent)
- Senior citizens over 65 partially self-sufficient or non self-sufficient who require support by professional to improve their autonomy in addition to or in replacement of the family network (where absent)
- Different situations where a coexistence of the matters above is present.

3.0.3 ATC Evaluation Framework

The following describes the organisation of ATC's evaluation framework based on the domains described in the inCASA evaluation framework.

Table 5: ATC Evaluation Framework

Patient Perception

Indicator	Stakeholder	Data source / method	Domain
Quality of Life / Wellbeing	End User Informal Carer	SF36 Interviews	Patient Perception
Perception of Service Usability Reliability Integration Timeliness Privacy	End User Informal Carer	Questionnaire Interviews	Patient Perception
Perception of Technology Usability Reliability Integration Privacy	End User Informal Carer	Questionnaire Interviews Contact Logs Installation Records	Patient Perception
Clinical Outcomes	End User Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception
Health and Social Resource Usage Integration	End User Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception
Safety	End User Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception

Service Provider / Professional Perception

Indicator	Stakeholder	Data source / method	Measure
Perception of Service Workload Usability Reliability Integration Timeliness Privacy	ATC Contact Centre Operators Social Workers Technicians General Practitioner	Questionnaire Interviews Logs Records	Service Provider / Professional Perception
Perception of Technology Usability	ATC Contact Centre Operators	Questionnaire Interviews	Service Provider / Professional Perception

Version **Error! Reference source not found.**4 15

20/08/2012

Reliability Integration Privacy	Social Workers Technicians General Practitioner	Logs Records Training records	
Clinical Outcomes	General Practitioner	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception
Health and Social Resource Usage Integration	ATC Contact Centre Operators Social Workers General Practitioner	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception
Safety	ATC Contact Centre Operators Social Workers Technicians General Practitioner	Questionnaire Interviews Logs Records Training records	

Organisational Change / Service Model Aspects

Indicator	Stakeholder	Data source / method	Measure
Resource Usage Social care usage Hospital admissions GP and out of hours service contacts Case manager contacts Emergency Visits	Organisation / Provider ATC Contact Centre Operators Social Workers Technicians General Practitioner Patient / End User	Logs Records Interviews Questionnaires	Organisational Change / Service Model Aspects
Service Integration	Organisation / Provider ATC Contact Centre Operators Social Workers Technicians General Practitioner Patient / End User	Referrals between organisations Questionnaire Interviews Logs	Organisational Change / Service Model Aspects
Business Models / Pathway Redevelopment	Organisation / Provider ATC Contact Centre Operators Social Workers General Practitioner Patient / End User	Logs Records Interviews Questionnaires	Organisational Change / Service Model Aspects

Clinical Effectivness

Indicator	Stakeholder	Data source / method	Measure
Resource Usage Social care usage Hospital admissions GP and out of hours service contacts Case manager contacts Emergency Visits	Organisation / Provider ATC Contact Centre Operators Social Workers General Practitioner Patient / End User	Logs Records Interviews Questionnaires	Clinical Effectivness
Health Interventions Number Types Outcomes Social Interventions Number Types	Organisation / Provider ATC Contact Centre Operators Social Workers General Practitioner Patient / End User	Record / Case Review Questionnaires	Clinical Effectivness
Clinical Change Clinical Variables	General Practitioners	Record	Clinical Effectivness

Version **Error! Reference source not found.**4 16

20/08/2012

Econmic Aspects

Indicator	Stakeholder	Data source / method	Measure

Running costs of delivering the service
 	
   Time used by provider staff
   Rental / purchase of equipment / software
 	
   Time used by end user
	Organisation / Provider
	ATC Contact Centre Operators
	Social Workers
	Technicians
	General Practitioner
	Patient / End User
		Logs
		Records
			Economic Aspects

Effects on patients use of health care:
   Social care usage
   Hospital admissions
   GP and out of hours service contacts
   Case manager contacts
   Emergency Visits
	Organisation / Provider
	ATC Contact Centre Operators
	Social Workers
	Technicians
	General Practitioner
	Patient / End User
		Logs
		Records
			Economic Aspects

Safety Aspects

Indicator	Stakeholder	Data source / method	Measure

Adverse Effects
   Service
   Technical
   Integration
	Organisation / Provider
	ATC Contact Centre Operators
	Social Workers
	Technicians
	General Practitioner
	Patient / End User
		Logs
		Records
		Interviews
		Questionnaires
			Safety

3.1 Chorleywood Health Centre Pilot, (UK)

3.1.1 Aim

The Chorleywood pilot aims to develop an integrated service delivery model that will combine health and social care in responding to the needs of frail older people with long term conditions. This service integration is driven by both health and social care. Information about the patient and data from the remote monitoring will be shared and exchanged between the general practice and social services.

This integrated service model supports the identification and monitoring of those frail patients with chronic disease who are at risk of sudden deterioration so that they can be treated and supported in their own home.   The integrated health and social team can monitor, review and respond to the patients' needs as they change by providing comprehensive support covering a range of services. Costly hospital admissions can be avoided and the number of bed days can be reduced and early discharge can be enabled. Appropriate social support can be identified earlier in order to enable the frail older patient to remain safe and independent in their own home.

A frail older patient will be monitored by a combination of health and habits sensors in their own home (blood pressure, weight, spo2, blood glucose, bed, chair PIR sensors). Sensor data is transferred from the home to the health care team in the general practice and to a key social

Version **Error! Reference source not found.**4 17

worker in social services. Data can be viewed on a combined health and social care interface. Aided by algorithms, changes in usual clinical measurements and levels of activity are measured.

Incoming data will be monitored by the health care team at Chorleywood Health Centre. Patterns of behaviour and physiological data, including in-bed restlessness, habits and deviations from habits, toilet visits, eating patterns, rapid weight loss or gain, medication adherence, blood pressure, weight ,spo2 and blood glucose will be assessed to provide decision support for the health and social care professionals for cases such as loss of autonomy or early detection of clinical deterioration. Responses to the information will be managed by joint case conference between health professionals at Chorleywood Health Centre and social workers from Hertfordshire Adult Social Services. These will be held weekly or sooner if deemed necessary and facilitated by means of video conferencing or teleconferences. Appropriate social and/ or medical interventions can then be determined by the joint team.

Objectives

- Build the integrated health and social service to deal with the data from both remote patient monitoring and environmental monitoring.
- Evaluate the value of the integrated service to both the frail elderly person and the social and clinical services that care for that person.
- Understand and measure the impact of such a service to a patient's quality of life
- Prevent or delay the eligibility of frail patients for social services
- Prevent or reduce the numbers of unnecessary interventions and hospital admission
- Reduce length of stay and enable early discharge of the frail patient into their own home

3.1.2 Sample
25 patients who are 65 or over and are on the disease register of Chorleywood Health Centre will be recruited to participate in the pilot.

3.1.3 CHC Evaluation Framework
The following describes the organisation of the CHC's framework based on the domains described in the inCASA evaluation framework.

Table 6: CHC Evaluation Framework

Patient Perception

Indicator	Stakeholder	Data source / method	Domain
Quality of Life / Wellbeing	End User / Patient / Informal Carer	SF36 Edmonton Frail Scale	Patient Perception
Perception of Service Usability Reliability Integration Timeliness Privacy	End User / Patient / Informal Carer	Questionnaire Interviews	Patient Perception
Perception of Technology Usability Reliability Integration	End User / Patient / Informal Carer	Questionnaire Interviews Contact Logs Installation Records	Patient Perception

Version **Error! Reference source not found.**4 18

20/08/2012

Indicator	Stakeholder	Data source / method	Measure
Privacy			
Clinical Outcomes Degree of change in clinical values	End User / Patient / Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception
Health and Social Resource Usage Integration	End User / Patient / Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception

Service Provider / Professional Perception

Indicator	Stakeholder	Data source / method	Measure

Perception of Service
  Workload
  Usability
  Reliability
  Integration
  Timeliness
   Privacy
	General Practitioners
	Nurses
	Social Workers
	Administrative Support
	Other Providers
		Questionnaire
		Interviews
		Logs
		Records
			Service Provider / Professional Perception

Perception of Technology
  Usability
  Reliability
  Integration
  Privacy
	General Practitioners
	Nurses
	Social Workers
	Administrative Support
	Other Providers
		Questionnaire
		Interviews
		Logs
		Records
		Training records
			Service Provider / Professional Perception

Clinical Outcomes Degree of change in clinical values	General Practitioners Nurses Social Workers Administrative Support Other Providers	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception
Health and Social Resource Usage Integration	General Practitioners Nurses Social Workers Administrative Support Other Providers	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception

Organisational Change / Service Model Aspects

Indicator	Stakeholder	Data source / method	Measure

Resource Usage
  Social care usage
  Hospital admissions
  GP and out of hours service contacts
  Case manager contacts
  Emergency Visits
	Organisation / Provider
	General Practitioners
	Nurses
	Social Workers
	Administrative Support
	Other Providers
	Patient
		Logs
		Records
		Interviews
		Questionnaires
			Organisational Change / Service Model Aspects

Service Integration	Organisation / Provider General Practitioners Nurses Social Workers Administrative Support Other Providers Patient	Referrals between organisations Questionnaire Interviews Logs	Organisational Change / Service Model Aspects
Business Models / Pathway Redevelopment	Organisation / Provider General Practitioners Nurses Social Workers Other Providers	Logs Records Interviews Questionnaires	Organisational Change / Service Model Aspects

Version **Error! Reference source not found.**4 19

Clinical Effectivness

Indicator	Stakeholder	Data source / method	Measure

Resource Usage
    Social care usage
    Hospital admissions
    GP and out of hours
    service contacts
    Case manager
    contacts
    Emergency Visits
	Organisation / Provider
	General Practitioners
	Nurses
	Social Workers
	Other Providers
	Patient
		Logs
		Records
		Interviews
		Questionnaires
			Clinical Effectivness

Health Interventions
    Number
    Types
Social Interventions
    Number
    Types
	Organisation / Provider
	General Practitioners
	Nurses
	Social Workers
	Other Providers
	Patient
		Record / Case Review
		Questionnaires
			Clinical Effectivness

Clinical Change Clinical Variables	General Practitioners Nurses	Record St George's Respiratory Questionnaire Edmonton Frailty scale SF 36	Clinical Effectivness

Econmic Aspects

Indicator	Stakeholder	Data source / method	Measure

Running costs of delivering the telemedicine service
 	
    Time used by provider staff
    Rental / purchase of equipment / software
 	
    Time used by end user
	Organisation / Provider
	General Practitioners
	Nurses
	Social Workers
	Other Providers
	Patient
		Logs
		Records
			Economic Aspects

Effects on patients use of health care:
    Social care usage
    Hospital admissions
    GP and out of hours
    service contacts
    Case manager
    contacts
    Emergency Visits
	Organisation / Provider
	General Practitioners
	Nurses
	Social Workers
	Other Providers
	Patient
		Logs
		Records
			Economic Aspects

Safety Aspects

Indicator	Stakeholder	Data source / method	Measure
Adverse Effects Service Technical Integration	Organisation / Provider General Practitioners Nurses Social Workers Administrative Support Other Providers Patient	Logs Records Interviews Questionnaires	Safety

Version **Error! Reference source not found.**4 20

3.2 Fundación Hospital Calahorra (FHC), Spain

3.2.1 Aim

The FHC pilot goal is to integrate health and socal services for patients with chronic obstructiveve pulmonary disease (COPD) who live a remote distance from the hospital.

Patients with COPD often decrease their physical activity because exercise can aggravate dyspnoea. The progressive physical deterioration associated with inactivity initiates a vicious cycle, with dyspnoea becoming problematic at increasingly lower physical demands. This pilot program aims to break this vicious cycle by promoting and monitoring rehabilitation exercise at home as this will improve patients' quality of life. The patient's clinical condition is also strongly influenced by their lifestyle and environment. Their life style (daily activity degree, autonomy, healthiness of the environment, diet guidelines, social life, etc.) is a determinant factor both in the appearance and in the evolution of COPD.

By integrating social and health services the FHC pilot aims to delay detirioration by promoting and monitoring rehabilitation exercise at home as well as providing additional support for social needs. This has a particular value for patients connected to FHC due to the distance between many patients' homes and the hospital. Moreover, a general shortage of staff means that by offering at home and self-monitoring patients' needs can be met more efficiently.

A specific training programme will be built for every patient. Portable pedal machines, weight scales, pulse oximeters and a touch screen device will be provided. Parameters that will be monitored include, fatigue, blood oxygen saturation and heart rate. Breathing exercises will be also included to improve the muscles involved in the process of breathing. The patient will also receive education about their disease and its symptoms and the different ways to deal with them. FHC's social worker will be the coordinator between the health professionals of FHC and the social workers at primary care level.

Objectives:

- Improved Clinical Outcomes.
- Improved quality of life or, at least maintained, given the constant deterioration of the illness being treated.
- More appropriate clinical interventions.
- Reduced Hospital Admissions.
- Increased independence
- Provide additional social support

3.2.2 Sample

35 patients who are 65 years and older and who have COPD stage II or III will be included in the pilot. Patients will enter the service via a referral from the Respiratory Medicine Department of FHC hospital.

3.2.3 FHC Evaluation Framework

The following describes the organisation of the FHC's framework based on the domains described in the inCASA evaluation framework.

Version **Error! Reference source not found.**4 21

Table 7: FHC Evaluation Framework

Patient Perception

Indicator	Stakeholder	Data source / method	Domain
Quality of Life / Wellbeing	End User / Patient / Informal Carer	SF36 Edmonton Frail Scale	Patient Perception

Perception of Service
  Usability
  Reliability
  Integration
  Timeliness
   Privacy
	End User / Patient / Informal Carer	Questionnaire
		Interviews
			Patient Perception

Perception of Technology
  Usability
  Reliability
  Integration
  Privacy
	End User / Patient / Informal Carer	Questionnaire
		Interviews
		Contact Logs
		Installation Records
			Patient Perception

Clinical Outcomes Degree of change in clinical values	End User / Patient / Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception
Health and Social Resource Usage Integration	End User / Patient / Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception

Service Provider / Professional Perception

Indicator	Stakeholder	Data source / method	Measure

Perception of Service
  Workload
  Usability
  Reliability
  Integration
  Timeliness
   Privacy
	Pulmonologist
	RHB Specialist
	General Practitioner
	Nurse
	Social Worker
	Physiotherapist
		Questionnaire
		Interviews
		Logs
		Records
			Service Provider / Professional Perception

Perception of Technology
  Usability
  Reliability
  Integration
  Privacy
	Pulmonologist
	RHB Specialist
	General Practitioner
	Nurse
	Social Worker
	Physiotherapist
		Questionnaire
		Interviews
		Logs
		Records
		Training records
			Service Provider / Professional Perception

Clinical Outcomes Degree of change in clinical values	Pulmonologist RHB Specialist General Practitioner Nurse Social Worker Physiotherapist	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception
Health and Social Resource Usage Integration	Pulmonologist RHB Specialist General Practitioner Nurse Social Worker Physiotherapist	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception

Organisational Change / Service Model Aspects

Version **Error! Reference source not found.**4 22

Indicator	Stakeholder	Data source / method	Measure

Resource Usage
    Social care usage
    Hospital admissions
    GP and out of hours
    service contacts
    Case manager
    contacts
    Emergency Visits
	Organisation / Provider
	Pulmonologist
	RHB Specialist
	General Practitioner
	Nurse
	Social Worker
	Physiotherapist
	Patient
		Logs
		Records
		Interviews
		Questionnaires
			Organisational Change /
			Service Model Aspects

Service Integration	Organisation / Provider Pulmonologist RHB Specialist General Practitioner Nurse Social Worker Physiotherapist Patient	Referrals between organisations Questionnaire Interviews Logs	Organisational Change / Service Model Aspects
Business Models / Pathway Redevelopment	Organisation / Provider Pulmonologist RHB Specialist General Practitioner Nurse Social Worker Physiotherapist Other Providers	Logs Records Interviews Questionnaires	Organisational Change / Service Model Aspects

Clinical Effectivness

Indicator	Stakeholder	Data source / method	Measure

Resource Usage
    Social care usage
    Hospital admissions
    GP and out of hours
    service contacts
    Case manager
    contacts
    Emergency Visits
	Organisation / Provider
	Pulmonologist
	RHB Specialist
	General Practitioner
	Nurse
	Social Worker
	Physiotherapist
	Patient
		Logs
		Records
		Interviews
		Questionnaires
			Clinical Effectivness

Health Interventions
    Number
    Types
Social Interventions
    Number
    Types
	Organisation / Provider
	Pulmonologist
	RHB Specialist
	General Practitioner
	Nurse
	Social Worker
	Physiotherapist
	Patient
		Record / Case Review
		Questionnaires
			Clinical Effectivness

Clinical Change Clinical Variables	Pulmonologist RHB Specialist General Practitioner Nurse	Record St George's Respiratory Questionnaire Edmonton Frailty scale SF 36	Clinical Effectivness

Econmic Aspects

Indicator	Stakeholder	Data source / method	Measure

Running costs of delivering
the telemedicine service
 	
    Time used by provider
staff
    Rental / purchase of
	Organisation / Provider
	Pulmonologist
	RHB Specialist
	General Practitioner
	Nurse
		Logs
		Records
			Economic Aspects

Version **Error! Reference source not found.**4 23

20/08/2012

equipment / software Time used by end user	Social Worker Physiotherapist Other Providers		

Effects on patients use of health care:
    Social care usage
    Hospital admissions
    GP and out of hours
    service contacts
    Case manager
    contacts
    Emergency Visits
	Organisation / Provider
	Pulmonologist
	RHB Specialist
	General Practitioner
	Nurse
	Social Worker
	Physiotherapist
		GRD system, diagnosis related groups	Economic Aspects

Safety Aspects

Indicator	Stakeholder	Data source / method	Measure

Adverse Effects
    Service
    Technical
    Integration
	Organisation / Provider
	Pulmonologist
	RHB Specialist
	General Practitioner
	Nurse
	Social Worker
	Physiotherapist
	Other Providers
	Patient
		Logs
		Records
		Interviews
		Questionnaires
			Safety

3.3 Institut National de la Sante et de la Recherche Medicale (INSERM), France

3.3.1 Aim and Objectives

The main objectives of the INSERM pilot is to develop a service of technologies for cancer patients (with a sufficient level of independence and living at home) focused on their habits in their daily life and the evolution of different physiological parameters that may be affected by the disease and / or treatment (rest-activity rhythm, body weight, symptoms score evaluated by the MDASI scale). This will result in improved quality of life and patient prognosis through facilitating health care coordination, controlling patient symptoms and enhancing circadian robustness.

By integrating health and social services a network of social and medical professionals is built around the patient. This will result in the most appropriate care being delivered in the shortest time possible and minimising also the burden on informal carers (mostly partners or family of the patient).

 INSERM will involve the hospital nurses as a primary access point for the patients. They will directly interact with the patient and point out any health problems at an early stage to the oncologist, the GP, the local nurse and/or other relevant healthcare professionals. Depending on the type of deteriorated monitored parameter (symptom, body weight, rest-activity etc.), as indicated by a level below a pre-set threshold and her interview of the patient, the nurse will refer the patient to the relevant health professional (oncologist, geriatrist, general practitioner, homecare nurse, psychologist, dietician, physical therapist or social worker)..

Objectives

20/08/2012

- early detection of drug-related adverse events or disease exacerbations through close monitoring of the health condition in order to prompt relevant intervention thus reduce hospitalization.
- Integrating health and social care for cancer patients whose services are normally provided by different health and social organisations.
- A better understanding of the health condition of cancer patients in their real life at home
- The definition of quantitative indices that will enable quick and appropriate intervention in case of alteration of the health condition of the patient staying at home.
- The effective implementation of decision procedures in order to treat these frail patients early and adequately, thus minimizing the risk of symptoms worsening, deterioration of general condition and emergency hospitalization.

.

3.3.2 Sample

30 patients who are over the age of 18 with a diagnosis of cancer and who are attending the Paul Brousse Hospital in Villejuif will be recruited to take part in the pilot.

3.3.3 INSERM Evaluation Framework

The following describes the organisation of the INSERM's framework based on the domains described in the inCASA evaluation framework.

Table 8: INSERM Evaluation Framework

Patient Perception

Indicator	Stakeholder	Data source / method	Domain
Quality of Life / Wellbeing	Patient / Informal Carer	SF36 Edmonton Frail Scale	Patient Perception

Perception of Service
  Usability
  Reliability
  Integration
  Timeliness
   Privacy
	Patient / Informal Carer	Questionnaire
		Interviews
			Patient Perception

Perception of Technology
   Usability
   Reliability
   Integration
   Privacy
	Patient / Informal Carer	Questionnaire
		Interviews
		Contact Logs
		Installation Records
			Patient Perception

Clinical Outcomes Degree of change in clinical values	Patient / Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception
Health and Social Resource Usage Integration	Patient / Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception

Service Provider / Professional Perception

Indicator	Stakeholder	Data source / method	Measure

Perception of Service
  Workload
  Usability
  Reliability
	Physician
	Nurse
	Social Worker
		Questionnaire
		Interviews
		Logs
		Records
			Service Provider /
			Professional Perception

Version **Error! Reference source not found.**4 25

20/08/2012

Indicator	Stakeholder	Data source / method	Measure
Integration Timeliness Privacy	Technician Other Provider		

Perception of Technology
  Usability
  Reliability
  Integration
  Privacy
	Physician
	Nurse
	Social Worker
	Technician
	Other Provider
		Questionnaire
		Interviews
		Logs
		Records
		Training records
			Service Provider /
			Professional Perception

Clinical Outcomes Degree of change in clinical values	Physician Nurse Social Worker Technician Other Provider	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception
Health and Social Resource Usage Integration	Physician Nurse Social Worker Technician Other Provider	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception

Organisational Change / Service Model Aspects

Indicator	Stakeholder	Data source / method	Measure

Resource Usage
  Social care usage
  Hospital admissions
  GP and out of hours service contacts
  Case manager contacts
  Emergency Visits
	Organisation / Provider
	Physician
	Nurse
	Social Worker
	Technician
	Other Provider
	Patient
		Logs
		Records
		Interviews
		Questionnaires
			Organisational Change /
			Service Model Aspects

Service Integration	Organisation / Provider Physician Nurse Social Worker Technician Other Provider Patient	Referrals between organisations Questionnaire Interviews Logs	Organisational Change / Service Model Aspects
Business Models / Pathway Redevelopment	Organisation / Provider Physician Nurse Social Worker Other Providers	Logs Records Interviews Questionnaires	Organisational Change / Service Model Aspects

Clinical Effectivness

Indicator	Stakeholder	Data source / method	Measure

Resource Usage
  Social care usage
  Hospital admissions
  GP and out of hours service contacts
  Case manager contacts
  Emergency Visits
	Organisation / Provider
	Physician
	Nurse
	Social Worker
	Technician
	Other Provider
	Patient
		Logs
		Records
		Interviews
		Questionnaires
			Clinical Effectivness

Health Interventions
  Number
  Types
	Organisation / Provider
	Physician
	Nurse
		Record / Case Review
		Questionnaires
			Clinical Effectivness

Version **Error! Reference source not found.**4 26

20/08/2012

Social Interventions
    Number
    Types
	Social Worker
	Technician
	Other Provider
	Patient		

Clinical Change Clinical Variables	Physician Nurse	Record G8 Scale SF 36 Questionnaire	Clinical Effectivness

Econmic Aspects

Indicator	Stakeholder	Data source / method	Measure

Running costs of delivering the telemedicine service
 	
    Time used by provider staff
    Rental / purchase of equipment / software
 	
    Time used by end user
	Organisation / Provider
	Physician
	Nurse
	Social Worker
	Technician
	Other Provider
		Logs
		Records
			Economic Aspects

Effects on patients use of health care:
    Social care usage
    Hospital admissions
    GP and out of hours service contacts
    Case manager contacts
    Emergency Visits
	Organisation / Provider
	Physician
	Nurse
	Social Worker
	Technician
	Other Provider
		Logs
		Records
			Economic Aspects

Safety Aspects

Indicator	Stakeholder	Data source / method	Measure

Adverse Effects
    Service
    Technical
    Integration
	Organisation / Provider
	Physician
	Nurse
	Social Worker
	Technician
	Other Provider
		Logs
		Records
		Interviews
		Questionnaires
			Safety

3.4   Konstantopouleio General Hospital of Nea Ionia Agia Olga (KGHNI), Greece

3.4.1 Aim and Objectives

The aim of the KGHNI pilot is to integrate social and health services in order to support patients with Congestive Heart Failure and co-morbidities who live in their own home. The integrated KGHNI services are designed to complement the established medical services and aim to provide doctors early signs of a patient's deterioration (clinical) to enhance the patients' quality of life (psychologically, functional-wise in home and in everyday activities). Both components contribute to better CHF patients' prognosis while effectively reducing the risk of re-hospitalization and averting non-required visits to the hospital's out-patient clinic.

The inCASA infrastructure will give the doctors of the Department of Cardiology of KGHNI the opportunity to monitor CHF patients physiological measurements, estimate the efficiency and

Version **Error! Reference source not found.**4 27

20/08/2012

safety of their medical treatment, make the appropriate regulations of the medication dose, and detect acute changes of patient situation and early treatment of acute problems.

Additionally to the clinical measurements, the activity of CHF patients will also be monitored (habits model), since they generally suffer from reduced mobility. A reduction in their average daily mobility or change in their habits is a strong indicator of a worsening clinical status. Another explanation for this reduced activity could be the onset of depression, something very common in this particular patient group.

For the above reasons the KGHNI integrated social and health services are targeted towards a) mitigating health-related risks by employing combined TH/TC views to assist doctors in identifying early on the deterioration of individual patients b) supporting the patients' everyday life, particularly in cases where their physical/social/in-home activities are also impaired by their psychological condition and/or other societal circumstances.

Objectives

- improving the speed of delivery and the quality of the provided healthcare services while at the same time reducing costs;
- reducing the medical risks for the patients due to their continuous monitoring,
- reducing patients' anxiety about their medical condition;
- understanding the health condition of CHF patients in their real life at home by analysing the pilot results;
- discovering correlations between the patients' medical condition and everyday habits thus enabling the consolidation of the latter as early indicators of worsening clinical status;
- Demonstrating that the active involvement of relatives and the assistance provided by social workers contribute to the patients' overall quality of life.
- Prolong elderly patients independence by supporting them in their own home
- Enable early discharge of patients
- Improve medical therapy in order to decrease the risk of hospital readmission

3.4.2 Sample

The pilot will include 25 patients who are 65 years and over who have a primary diagnosis of Chronic Heart Failure and are outpatients of the Cardiology department at KGHNI. . Patients may also have co-morbidites.

3.4.3 KGHNI Evaluation Framework

The following describes the organisation of the KGHNI's framework based on the domains described in the inCASA evaluation framework.

Table 9: KGHNI Evaluation Framework

Patient Perception

Indicator	Stakeholder	Data source / method	Domain
Quality of Life / Wellbeing	End User / Patient / Informal Carer	SF36 Edmonton Frail Scale	Patient Perception
Perception of Service	End User / Patient /	Questionnaire	Patient Perception

Version **Error! Reference source not found.**4 28

20/08/2012

Indicator	Stakeholder	Data source / method	Measure
Usability Reliability Integration Timeliness Privacy	Informal Carer	Interviews	

Perception of Technology
  Usability
  Reliability
  Integration
  Privacy
	End User / Patient /
	Informal Carer
		Questionnaire
		Interviews
		Contact Logs
		Installation Records
			Patient Perception

Clinical Outcomes Degree of change in clinical values	End User / Patient / Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception
Health and Social Resource Usage Integration	End User / Patient / Informal Carer	Questionnaire Interviews Record / Case Review	Patient Perception

Service Provider / Professional Perception

Indicator	Stakeholder	Data source / method	Measure
Perception of Service Workload Usability Reliability Integration Timeliness Privacy	Doctors Nurses Social Workers Physiotherapists Installers Technicians Other Providers	Questionnaire Interviews Logs Records	Service Provider / Professional Perception

Perception of Technology
  Usability
  Reliability
  Integration
  Privacy
	Doctors
	Nurses
	Social Workers
	Physiotherapists
	Installers
	Technicians
	Other Providers
		Questionnaire
		Interviews
		Logs
		Records
		Training records
			Service Provider /
			Professional Perception

Clinical Outcomes Degree of change in clinical values	Doctors Nurses Social Workers Physiotherapists Installers Technicians Other Providers	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception
Health and Social Resource Usage Integration	Doctors Nurses Social Workers Physiotherapists Installers Technicians Other Providers	Questionnaire Interviews Record / Case Review	Service Provider / Professional Perception

Organisational Change / Service Model Aspects

Indicator	Stakeholder	Data source / method	Measure

Resource Usage
  Social care usage
  Hospital admissions
  GP and out of hours
  service contacts
  Case manager
  contacts
  Emergency Visits
	Organisation / Provider
	Doctors
	Nurses
	Social Workers
	Physiotherapists
	Installers
	Technicians
	Other Providers
		Logs
		Records
		Interviews
		Questionnaires
			Organisational Change /
			Service Model Aspects

Version **Error! Reference source not found.**4 29

20/08/2012

Patient			
Service Integration	Organisation / Provider Doctors Nurses Social Workers Physiotherapists Installers Technicians Other Providers Patient	Referrals between organisations Questionnaire Interviews Logs	Organisational Change / Service Model Aspects
Business Models / Pathway Redevelopment	Organisation / Provider Doctors Nurses Social Workers Physiotherapists Installers Technicians Other Providers	Logs Records Interviews Questionnaires	Organisational Change / Service Model Aspects

Clinical Effectivness

Indicator	Stakeholder	Data source / method	Measure

Resource Usage
    Social care usage
    Hospital admissions
    GP and out of hours
    service contacts
    Case manager
    contacts
    Emergency Visits
	Doctors
	Nurses
	Social Workers
	Physiotherapists
	Patient
		Logs
		Records
		Interviews
		Questionnaires
			Clinical Effectivness

Health Interventions
    Number
    Types
Social Interventions
    Number
    Types
	Doctors
	Nurses
	Social Workers
	Physiotherapists
	Patient
		Record / Case Review
		Questionnaires
			Clinical Effectivness

Clinical Change Clinical Variables	Doctors Nurses Social Workers Physiotherapists	Record Kansas City Cardiomyopathy Questionnaire (KCCQ) EQ-5D-3L SF 36	Clinical Effectivness

Econmic Aspects

Indicator	Stakeholder	Data source / method	Measure

Running costs of delivering the telemedicine service
 	
    Time used by provider staff
    Rental / purchase of equipment / software
 	
    Time used by end user
	Organisation / Provider
	Doctors
	Nurses
	Social Workers
	Physiotherapists
	Patient
	Other Providers
		Logs
		Records
			Economic Aspects

Effects on patients use of health care:
    Social care usage
    Hospital admissions
    GP and out of hours
    service contacts
	Organisation / Provider
	Doctors
	Nurses
	Social Workers
	Physiotherapists
	Patient
		Consolidated
		Hospitalisation Expenses
			Economic Aspects

Version **Error! Reference source not found.**4 30

20/08/2012

Case manager contacts Emergency Visits	Other Providers		

Safety Aspects

Indicator	Stakeholder	Data source / method	Measure
Adverse Effects 　Service 　Technical 　Integration	Organisation / Provider Doctors Nurses Social Workers Physiotherapists Installers Technicians Other Providers Patient	Logs Records Interviews Questionnaires	Safety

Version **Error! Reference source not found.**4　31

20/08/2012

4 Conclusion

This deliverable has described the inCASA pilot aims, sample and methodology to be used in the evaluation of the inCASA pilots. It has presented an overall inCASA evaluation framework that is to be used in order to provide comparable results among the different sites as well as how the framework will be organised in order to support site specific aims and objectives. The output of this document will be used to support D6.5 Trial Data Progress Reports due in M30 and D6.6 pilot evaluation report due in M36.

Version **Error! Reference source not found.**4 32

20/08/2012

5 References

1. The MAST- Manual (2010) http://www.renewinghealth.eu/project-overview/overview/assessment-method.

2. Renewing for Health http://www.renewinghealth.eu/

3. WHO project "Step approach to chronic disease risk factor surveillance (STEPS), see www.whoint/chp/steps

Version **Error! Reference source not found.**4 33

20/08/2012