STOPandGO
Sustainable Technology for Older People – Get Organised
CIP-ICT-PSP – 2013 - 621013

Evaluation framework for STOPandGO
D6.1

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1 Executive Summary

This methodological document focuses on Work Package 6 (WP6) of the STOPandGO Project (shortly referred as “SaG”), which is about the evaluation and quality assessment of the project development and project outcomes.

The ultimate objective of SaG is to produce and test a European Specification Template (EST) for tenders that support the EU policies on Active and Healthy Ageing, by procuring health services for older people enabling innovative care models.

"Health" should be understood in all the document accordingly to WHO definition: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”

"Innovation" should be intended in various senses, about the tender specification:

1) Procuring services enabled by technology instead of 'just' innovative technology itself;
2) Procuring based on outcome-based specifications, payment on achievement of agreed Key Performance Indicators;

as well as about the services to be provided:

3) Focussing on organisational changes needed to offer the services; and
4) Provide the possibility to up-scale promising innovative solutions, taking into account that innovations are often offered by SME’s and have mostly only proven effect in small scale pilots tenders.

Focus is on incentivising cooperation and SME engagement.

A remark that needs to be added is the fact that the emphasis on each of the four key types of innovation can differ among the procuring organizations depending on local conditions and the topic of the tender.

The present deliverable is intended as a methodological guide to be used by the other Work Packages to perform their specific tasks.

In particular, the actual criteria for the evaluation of the functionalities that enable the innovation in the models of health management are schematised in the Deliverable D2.2 on the EST, which is constantly maintained to take into account the lessons learned by the partners during the development of the project.

Analogously, the criteria for the selection of the best offer are the matter of WP5; therefore will be described in the related deliverables and at the end of the project they will be harmonised to feed again the Deliverable D2.2.

According to the PPI guidelines, the tenders must not involve R&D. Therefore the "innovation" aspect should consist in the sustainable, structural improvement of a particular care model, enhanced by up-to-date technological solutions, and able to scale up to anticipate a component of a fully Integrated Care.

In fact, Integrated Care cannot be realized by a single tender; several Action Lines dealing with different degrees of readiness and challenges should be followed, ranging from the management
of palliative care on highly complex patients with multiple conditions, to a social network approach to assist communities of practice to enhance the self-care and the patients’ activation on specific health issues.

This Work Package 6 on evaluation builds on two kinds of contributions:

1. initially the reference material produced by WP2, 3, 4, will be used to set up the conceptual basis for the evaluation;
2. towards the end of the project, the deliverable will consider the reports on the actual experiences from the procurers in WP5 and the efforts on exploitation in WP7, which will be analysed in a comparative way to extract the lessons learned and inspire the upgrade of the reference material.

The results of this Work Package should be useful for adoption and refinement of procurement procedures, decisions making on extension or adoption of services and cross-learning.

The main objectives of WP6 are to extract lessons learnt from a comparative analysis of:

- Evaluation of the achievement of project objectives, regarding the peculiarity of PPI as a novel instrument for coordinate public procurement (to perform the collaborative public procurement procedure, to test the suitability of the PPI instrument when applied to the Integrated Care services, to create a momentum in the EU market)
- Evaluation of the local tendering processes and the usability of the proposed Template (EST) to produce effective tenders and to assess the bids.
- Evaluation of the usability of the proposed indicators to assess the impact on quality of service provided, on health status of target population and informal carers, and budgetary impacts and return on investment related to the acquisition of services supported by technological solutions.
- Evaluation of the contribution of the project to the achievement of the European Innovation Partnership on Active and Healthy Ageing (EIP-AHA) objectives.

In this deliverable, which is the first (D6.1) in a series of three outputs from WP6, we describe the development of an evaluation framework for SaG with the final goal to produce a practical handbook for its application.

It is a work-in-progress and will remain as such until the end of the project.

The details on the actual indicators and the detailed criteria used in the evaluations are in other deliverables, e.g. the two deliverables produced by WP2 (the Reference Business Case and the European Specification Template) or the various reports produced by the specific assessment activities in WP5.

The main tasks during this initial phase are to identify the kinds of elements to be evaluated, specially to identify the requirements that should be specified in the tenders to assist the different kinds of evaluations.

When possible, existing methodologies already in use in Europe will be adopted such as MAST (Model for Assessment of Telemedicine Applications). Alongside we will include topics to match the needs of WP2 with more details of users finally selected for inclusion in SaG services.

The contribution to the EIP-AHA will be evaluated using the Maturity Model developed by the Action Group B3 – Integrated Care, and the framework currently under development by IPTS.
Then, a complete plan of evaluation including indicators, evaluation procedure and adequate timescale for collection of data is being developed.

<table>
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<th>In principle, each locality will perform its assessment according to common principles and coherent tools, with appropriate adaptations to the local contexts and the topic of the actual tenders involved.</th>
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<td>Most of the data for the indicators will be extracted automatically from the routine data, even if for particular purposes ad hoc questionnaires will be developed and used. Appropriate requirements in the tenders will assure that the necessary data will be generated as a part of the health services provision.</td>
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<td>The detailed reports produced by each locality will be collected and compared by the Consortium in WP5, in order to extract the lessons learned and to improve the various steps of the involved processes.</td>
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The ultimate evaluation of the success of the PPI Pilot can only be performed after the end of the project, in relation to the **success of the exploitation** in creating the momentum in European Regions about the domain of Integrated Care supported by the digital technologies.

This goal can be achieved in the following years by a close collaboration with the EIP-AHA initiative, contributing to the analysis of the good practices within the appropriate Action Lines (see § 2.3.4).
2 The evaluation methodologies in SaG

2.1 The evaluation issues in SaG

According to the Description of Work, the objectives on Work Package 6 (WP6) include:

*This WP is focused on the evaluation and quality assessment of the project development and project outcomes. [...] The results of this work package should be useful for adoption and refinement of innovative procurement procedure, decisions making on extension or adoption of services and cross-learning.*

The current document intends to satisfy the requirements of Task 6.1 “Development of an evaluation framework for STOPandGO”:

*During this task the specific elements to be evaluated will be identified as the time that the scope of the tendering process is being determined in earlier work packages. This will help determine a range of generic outcome measures for all countries, as well as potentially some country specific outcomes depending on how the scope of tenders may differ. These outcomes will both inform the ongoing implementation of innovation but also can be used in terms of judging the performance of service providers in line with any stipulations set out in contracts for service provision.*

*This information can also be used by service providers to improve the quality of services provided, e.g. drawing on feedback and experience from end users.*

*When possible, existing methodologies already in use in Europe will be adopted (as MAST or FIM, for example). The contribution to the EIP-AHA will be evaluated using the framework currently under development by IPTS, if available at the proper moment.*

*Complete plan of evaluation including indicators, evaluation procedure and adequate timescale for collection of data will be developed.*

*The collection of necessary data from pilot sites will be included as part of tender requirements and subsequent contracts with procurers.*

The result of Task 6.1 are used by all the deployments in the project, and in particular by:

- Task 6.2 - Actual services deployment and continuous evaluation.
- Task 6.3 - Analysis of results

2.2 The evaluation aims in SaG

SaG will perform quality assurance and evaluation according to three major perspectives:

1. To monitor and evaluate the advancement of the process carried on by SaG to prepare and run the PPI, identifying barriers and enabling factors, i.e. to answer the question: "what are the preconditions for an appropriate usage of the PPI instrument in the eHealth field?"

2. To discuss the quality and evaluate the usability of the EST, i.e. to answer to the questions:

   o Are the specifications on the services in the field of health and social care, augmented by technology, able to fit with the intent of promoting the improvement of the care provision and a coherent development of the market across Europe?
   
   o Is it possible to clearly identify a number of common specifications at European level in the delivery of health services?
3. To monitor and evaluate the local tendering processes and the related deployments, i.e. to answer to the question: “what is the impact of the local deployments on the system and on the benefits for the patients in the target population?”

2.2.1 Project evaluation

The first perspective regards the suitability of the application of the PPI instrument to the Objective 3.2 of the call, i.e. “eHealth, active and healthy ageing and assisted living”.

The lessons learned by SaG, as an umbrella project on the services provision in the wide domain of innovative models of Integrated Care, will be systematized for the benefit of the next use on similar topics, to produce recommendations about strengths and weaknesses of the PPI in the eHealth sector and to suggest the optimal usage of the instrument, as well the risks and the challenges to be faced.

2.2.2 EST Usability evaluation

The second perspective focuses on the assessment of the specifications, after reaching an increased awareness about the potentialities of the offer by the Open Market Consultation, with the related toolkit for its application and the educational material.

It will consider the actual adaptability and usability of the specifications in the local contexts, together with the strengths and weaknesses resulting from the pilot deployments within SaG.

In particular, the activities will assess the usability of the guidelines provided in the EST on:

- the metrics to identify profiles of patients who may benefit from the provision of eHealth technology services (for example: condition, age, severity of the condition, comorbidity, socio-economic status and any other relevant factors);
- the identification of services needs and the description of technological requirements;
- the selection of adequate performance indicators.
2.2.3 Local tendering processes evaluation

The third perspective deals with a **comparative evaluation of the local deployments**, to validate and strengthen the evidence for implementation of solutions with chronic disease management and age-friendly services, especially on effectiveness, cost-efficiency and transferability of the implementation of the services.

It is understood that it is extremely difficult to isolate the contribution of the technological solutions to the performance from the whole effect of an innovative care model, which is enabled by these technologies. The experience of parallel sites pilots in four different countries will offer a unique opportunity, not only to have local evaluation, but also to develop a Pan-European view. This will be conducted under guarantee of anonymity and privacy of personal data protected by law. Data aggregation will add value to each and every one of the procurers and to potential commissioners and procurers elsewhere in Europe.

Evaluation follows the identified legal, ethical and regulatory processes as described by WP4. SaG, according to the PPI approach, doesn’t involve R&D activities because it aims to promote the diffusion of health services supported by technological solution that have already passed the experimental stage, and whose effectiveness has already been recognized.

Therefore the evaluating of effectiveness of SaG services will contribute to the European evidence database. As COCIR reminds us: “*The shortage of robust studies documenting the economic benefits and cost-effectiveness of eHealth is a challenge. eHealth is an important tool to achieve the sustainability of healthcare systems, but an innovative business model for eHealth is needed urgently. […] The scale of most eHealth projects and the important sums of taxpayers money invested in them, make it crucial for governments and payers to evaluate the impact of eHealth programmes.*”

Although this is not the main goal of SaG, but rather to act as a stimulation to propagate the innovation across Europe.

Other European projects that deal specifically with the collection of evidence, performing appropriate clinical trials, include Renewing Health² and United4Health³

- RENEWING HEALTH (RH) aimed at implementing large-scale real-life test beds for the validation and subsequent evaluation of innovative telemedicine services using a patient-centred approach and a common rigorous assessment methodology (MAST – Model for Assessment of Telemedicine.– see 2.3.1).

- United for Health (U4H), instead, is utilising the results and good practices from previous projects and trials, including the Renewing Health project, and provide scaled up solutions. United for Health is employing the MAST methodology to evaluate a set of large scale deployment pilots.

Some Consortium partners have participated in RH and U4H. Their knowledge will contribute to exploit the methodology for the purposes of assessment in SaG.

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¹ see for example the list presented in “COCIR Telemedicine Toolkit - Supporting Effective Deployment of Telehealth And Mobile Health” May 2011 http://www.cocir.org/fileadmin/Publications_2011/telemedicine_toolkit_link2.pdf
² REgioNs of Europe WorkInG toGether for HEALTH, http://www.renewinghealth.eu
³ http://united4health.eu
2.3 Relevant methodologies to assess effectiveness of telecare and telehealth – short review

The evaluation activities will be based on existing initiatives, using established and scientifically validated methodologies, extending and refining the Model of Assessment of Telemedicine (MAST, a framework developed by previous EU initiatives and already applied in Renewing Health and United for Health) in conjunction with other acknowledged methods. In fact, earlier EU technology projects have sometimes limited their aims to the technology rather than the users of the technology themselves. However, as has been already mentioned, the realization of clinical trials designed to evaluate the effectiveness of the services supported by technology is not among the aims of SaG.

This section regards a review of some relevant evaluation methodologies, to figure out if and how they can be optimally used for the various purposes of WP6. A table at the end of this chapter will summarize the analysis.

2.3.1 MAST

The Model for ASsessment of Telemedicine (MAST) is a framework ensuring a rigorous evaluation of telemedicine applications in the healthcare sector. Here is the description produced by Renewing Health:

The model was developed as part of the MethoTelemed project (www.telemed.no/methotelemed), which aimed to provide a structured framework for assessing the effectiveness and contribution to quality of care of telemedicine applications.

Accordingly, MAST can form the basis for decision making on use of telemedicine solutions in EU and the European countries.

A stakeholder-oriented approach

The background of MAST is twofold:

- A systematic literature review on the impacts and costs of telemedicine services, qualitative and quantitative results, and explicit and implicit methodologies with the purpose of synthesising proposals for further research methodologies.

- Stakeholder participation through a series of workshops.

The stakeholders represented a wide range of interest groups, among these: patients, health professionals, health insurance, the IT industry, international organisations, and legal and health authorities.

First, they were asked to evaluate the suitability of Health Technology Assessment, explicitly the EUnetHTA Core Model (www.eunethta.eu), for the field of telemedicine. Secondly, the Core Model was adapted in order to provide stakeholders with a rigorous frame specifically for the assessment of telemedicine applications.
Three important evaluation steps

MAST works with 3 steps in an assessment:

Step1: Preceding considerations

The first step of MAST consists of a number of preceding considerations in order to determine whether your institution can carry out the assessment at this point in time.

One issue is the maturity of the application: Is the technology at a mature and steady state so that effects and costs can be assessed?

Another issue is at which organisational level the assessment should be carried out: Can the organisation provide enough patients to perform a statistically significant result?

If not, it should be considered to collaborate with other institutions and perform the assessment a regional or national level.

Step2: Multidisciplinary assessment

The second step is the multidisciplinary assessment comprising seven domains:

1. Health problem and characteristics of the application
2. Safety
3. Clinical effectiveness
4. Patient perspectives
5. Economic aspects
6. Organisational aspects
7. Socio-cultural, ethical and legal aspects

A ‘MAST Manual’ is publicly available (www.renewinghealth.eu/project-overview/overview/assessment-method) and describes the domains in detail, including information on topics, methods for data collection, and outcome measures for each domain.

A number of more practical guides for how to use MAST can also be found here.

Step3: Transferability of results

Another important goal is to assess the transferability of results to other settings and countries from studies of specific telemedicine applications.

Hence, the third step of MAST is a so called ‘transferability assessment’, i.e. determining whether particular demographic, epidemiological, organisational or economical issues have affected the outcome of a particular study, and to what extent the results can be transferred to e.g. a larger patient group, another organisation, or other countries.

MAST is for all to use

MAST is specifically developed to ensure the development of multidisciplinary and rigorous assessments of telemedicine applications in all of Europe.
For that reason, a MAST Manual and MAST Toolkit is made publically accessible to anyone with an interest in the assessment of telemedicine applications. Documents, toolkit and education videos are available at www.renewinghealth.eu/projectoverview/overview/assessmentmethod and www.mast-model.info

MAST offers a framework within which relevant outcome measures can be evaluated including before and after measures of:
- Satisfaction (of patient, carer, family and service)
- Quality of life
- Changed conditions
- Readmissions
- Cost savings

The STOPandGO consortium has experience with the MAST (Model of Assessment of Telemedicine) framework, which is one starting point for an evaluation framework. MAST proposes a model that recognizes three main elements to be included in an evaluation:

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<tr>
<td>Preceding considerations</td>
<td>Multi-disciplinary assessment</td>
<td>Transferability Assessment</td>
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- **Purpose** of the telemedicine application
- **Relevant alternatives** (current practice)
- **International, national, regional or local level of assessment**
- **Maturity** of the application

**Seven domains:**
1. Health Problem and characteristic of the application (descriptive)
2. Safety (outcome)
3. Clinical effectiveness (outcome)
4. Patient Perspectives (outcome)
5. Economic Aspects (outcome)
6. Organisational aspects (outcome)
7. Socio-cultural, ethical and legal aspects (descriptive)

- **Cross-border**
- **Scalability**
- **Generalizability**

**Box 1: MAST Framework**

### 2.3.2 The Whole System Demostrator methodology

The Whole System Demonstrator (WSD) programme was a two year research project funded by the Department of Health to find out how technology can help people manage their own health while maintaining their independence.

The WSD programme is believed to be the largest randomised control trial of Telecare and Telehealth in the world to date. Thousands of members of the public were involved in the programme with individuals being recruited at three sites (Cornwall, Kent and Newham).
The WSD had two main goals:

- The demonstration aspect refers to delivering a model that results in more integrated working practices across the NHS (health care) and Local Authorities (social care) at organisational and routine service delivery levels, supplanting traditional models of care through increased use of telehealth and telecare services.

- The second goal was to test the wide scale impact of telehealth (the remote exchange of data between a patient, at home, and health care professionals, to assist in the management of an existing long-term condition i.e. COPD, diabetes, heart failure), and telecare, (the remote, automatic monitoring of an individuals’ personal health and safety, i.e. mobility, and home environment).

Some recommendations about evaluation, derived from the Whole System Demonstrator and extracted from “Evaluating telecare and telehealth interventions” ⁴ are:

- Careful planning is the key to carrying out a good-quality evaluation. Allow sufficient time for the planning and design stages.
- The evaluation should be adequately funded and resourced, using staff with the appropriate skills to carry out the necessary tasks.
- Set clear questions to be answered from the outset, to guide your planning. These can be identified from a review of the literature so as to address gaps in current knowledge, and by considering important local issues.
- Select a design that is appropriate to, and can therefore accurately answer, the evaluation questions.
- Clearly define the population for which the intervention will be evaluated. Set out clear criteria for inclusion and exclusion and ensure that these are adhered to. Make sure you identify an appropriate number of participants for the planned analyses.
- Use valid and reliable measures of the outcomes of interest, and consider the time points at which they will be administered.
- Factor in time to allow for completion of ethics or research and development applications, where the evaluation constitutes research.
- Use evidence-based recruitment and retention strategies to ensure high levels of participation and to minimise attrition.
- Ensure that data collection agreements between the sites involved are put into place prior to the start of data collection. Data management strategies, including frequent validation checks, should be factored into the planning.

### 2.4 Other initiatives relevant for the evaluation

#### 2.4.1 The OECD projects on indicators

In order to allow forms of comparison between the different states, the OECD have launched several projects aiming at developing sets of indicators addressing the evaluation of specific aspects of the delivery of health services. These include:

- The OECD Telehealth Benchmarking Task Force
- The OECD Healthcare Quality Indicators project

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The OECD Telehealth Benchmarking Task Force

The OECD Telehealth Benchmarking Task Force’s (TBTF) was formed to recommend a limited set of telehealth survey questions (and indicators) for international comparison to the OECD’s Benchmarking Adoption and Use of Information and Communication Technologies in the Health Sector project.

The TBTF focused its investigation on three areas of clinical practice where telehealth technologies are used to deliver patient care:
1. synchronous (video) consultation,
2. asynchronous (store and forward) consultation,
3. remote (patient) monitoring sometimes known as telehomecare.

A fourth area of interest focused on contextual indicators (e.g. technological infrastructure and specific policies to incent and regulate the use of telehealth technologies) that could serve to describe the current state of each country where the extent of such enablers may affect the implementation and adoption of telehealth technologies.

Telehealth Benchmarking Task Force reviewed several Telehealth questionnaires that have (or will be) deployed in different international jurisdictions. The purpose of creating this compendium was to map internationally sourced telehealth survey items to the three categories of synchronous, asynchronous and remote monitoring.

OECD Health Care Quality Indicators Project

The OECD Care Quality Indicators project, initiated in 2002, aims to measure and compare the quality of health service provision in the different countries.

An Expert Group has developed a set of quality indicators at the health systems level, which allows to assess the impact of particular factors on the quality of health services.

For more information please see http://www.oecd.org/els/health-systems/36262363.pdf

2.4.2 Systems to evaluate the impact of services on patients health and well-being

Several systems are available to assess the state of the patients. They can be used either to select the patients for enrollment in the services or to assess the impact of the services on their health, by detecting changes occurring between the time of enrollment and the progress of the service provision. Among the best-known systems are:

ICF: International Classification of Functioning, Disability and Health.

This classification is coordinated by the World Health Organization (WHO). After nine years of international revision efforts, the World Health Assembly on May 22, 2001, approved the International Classification of Functioning, Disability and Health and its abbreviation of “ICF.”

This classification was first created in 1980 and then called the International Classification of Impairments, Disabilities, and Handicaps, or ICIDH[1] by WHO to provide a unifying framework for classifying the health components of functioning and disability.

The ICF classification complements WHO’s International Classification of Diseases-10th Revision (ICD), which contains information on diagnosis and health condition, but not on functional status. The ICD and ICF constitute the core classifications in the WHO Family of International Classifications (WHO-FIC). The ICF is structured around the following broad components:

5 For more information about indicators and questionnaires see Zelmer J. (2013) Report of the OECD Telehealth Benchmarking Task Force
• Body functions and structure
• Activities (related to tasks and actions by an individual) and participation (involvement in a life situation)
• Additional information on severity and environmental factors

Functioning and disability are viewed as a complex interaction between the health condition of the individual and the contextual factors of the environment as well as personal factors.

The picture produced by this combination of factors and dimensions is of "the person in his or her world". The classification treats these dimensions as interactive and dynamic rather than linear or static. It allows for an assessment of the degree of disability, although it is not a measurement instrument. It is applicable to all people, whatever their health condition.

The language of the ICF is neutral as to etiology, placing the emphasis on function rather than condition or disease. It also is carefully designed to be relevant across cultures as well as age groups and genders, making it highly appropriate for heterogeneous populations.

InterRAI: “International Resident assessment instrument”

InterRAI (www.interrai.org) refers to a suite of comprehensive clinical assessment instruments developed by the homonymous organization (including e.g. the RUG system and MI Choice).

The interRAI methodology differs from other assessments in that the purpose of assessment is to consider the older person’s functioning (as opposed to status). They are specifically designed to find opportunities for improvement and/or any risks to the older person’s health, which then form the basis of a care plan.

The assessments are designed so that each version includes items common across the person’s continuum of care e.g. home, hospital or residential care, as well as focusing on items particular to that context, e.g. home care considers the person’s ability to cook meals which is not included in the long term care version.

FIM: The Functional Independence Measure

FIM, mentioned in the DOW, is an internationally Standardised Assessment Tool, translated in to many languages which is used to assesses physical and cognitive disability. This scale focuses on the burden of care, i.e., the level of disability indicating the burden of caring for them.

2.4.3 Telecare Business Case Planning Model (TCBPM)

The Telecare Learning & Improvement Network in the UK\(^7\) has developed a business case modelling tool to support social service departments in the development of strategy and business cases for the mainstreaming of telecare. The immediate aim was to support councils in making decisions about how to spend public funds available from a national government programme in an economically sustainable manner.

The initiative was intended to pump-prime change and the incorporation of telecare in the delivery of mainstream services provided at the community level. A Telecare Implementation Guide and accompanying support materials were developed to give detailed guidance on developing and implementing a telecare service. Active ongoing support was provided through the Telecare Learning & Improvement Network (LIN) of the Care Services Improvement Partnership (CSIP).

This initiative was mainly to encourage cooperation between Health and Social Care providers and the tool we could use from that approach emphasizes this cooperation.

\(^7\) http://www.ict-ageing.eu/?page_id=1365
2.4.4 Risk assessment tools

Several systems are available to perform a risk assessment, which may be used to identify citizens as candidates to be enrolled in the programs. A recent review identified 27 unique risk prediction models about emergency hospital admission: 11 were developed in the United States, 11 in the United Kingdom, 3 in Italy, 1 in Spain, and 1 in Canada; 9 models were derived using self-report data, and the remainder (n = 18) used routine administrative or clinical record data.  

Examples of a tool using routine data and one using ad hoc questions are:

- **Scottish Patients at Risk of Readmission and Admission (SPARRA)**: is a risk prediction tool developed by ISD to predict an individual’s risk of being admitted to hospital as an emergency inpatient within the following year. SPARRA data can help health care professionals to prioritize patients with complex care needs who are likely to benefit most from anticipatory health care.

- **Emergency Admission Risk Likelihood Index (EARLI)**: A simple, six-item tool that was developed and validated through a prospective cohort study of older people. A scoring system was devised to identify those older people at low, moderate, high and very high risk of having an emergency admission within the following 12 months.

The Action Area 4 on Risk Prediction of the EIOnAHA Action Group B3 on Integrated Care produced a list of 24 tools able to predict the likelihood of emergency admission to hospital of older people, either generic or for specific conditions.

2.4.5 The Monitoring and Assessment Framework for the EIP on AHA

This section regards the activities performed by the Institute for Prospective Technological Studies at the Joint Research Centre of the European Commission.

They are running a project on the “Monitoring and Assessment Framework for the European Innovation Partnership on Active and Healthy Ageing (MAFEIP)”. It was launched by the eHealth team at the IPTS Information Society Unit, DG JRC, in collaboration with the Directorate General of Health and Consumers (DG SANCO) and the Directorate General of Communications Networks, Content and Technology (DG CNECT).

The main objective of MAFEIP is to define a common monitoring framework, which should facilitate the monitoring of the process of the EIP on AHA and facilitate and harmonise the monitoring of the outcome objectives of the Action Groups (not the individual commitments to the six specific Action Groups). It will also seek to establish a link between the monitoring results and the EIP on AHA objectives, namely the triple win and the overall objective of two extra healthy life years.

In addition, the eHealth team is managing an online community at the IPTS Information Society Unit online Collaborative Science Portal (ISCSIP). This community can be used to open discussions with the Action Groups, and external specialists in the field where appropriate.

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9 http://www.isdscotland.org/Health-Topics/Health-and-Social-Community-Care/SPARRA/


11 B3 Integrated Care, AA4 risk prediction, TOOL LIST FOR RISK PREDICTION, 2014-04-02. Internal working document (available on request).
2.4.6 The activities of the Action Group B3 “Integrated Care” of EIP-AHA

The B3 Action Group on Integrated Care was established to develop a response to the challenges set by the Strategic Implementation Plan (SIP) of the European Innovation Partnership for Healthy and Active Ageing (EIP-AHA).

The realistic but challenging Action Plan is designed to encourage, enthuse and inspire health and social care providers, along with industry and academia, to collaborate with patients, service users and carers to form partnerships to deliver innovative service redesign. This work is being underpinned by a commitment to patient / user empowerment, education and training for all stakeholders (workforce, patients / users and carers), supported by technology, where safe and effective to do so.

The key objective of the Action Plan is to assist Regions and delivery organisations in addressing the key challenges they have identified in implementing integrated care.

Activities were selected for implementation because of their relevance and potential for impact. B3 Action Group members reaffirmed their original commitments by agreeing to contribute to the achievement of objectives that are relevant for their region / organisation, considering the resources and capacities available to them. They also agreed to work collaboratively to implement related deliverables in their own region / organisation and to support others to do so.

Within the Action Plan, nine Action Areas have been established:

- AA1 Organisational Models
- AA2 Change Management
- AA3 Workforce Development
- AA4 Care Pathways
• AA5 Risk Stratification
• AA6 Patient/User Empowerment
• AA7 ICT
• AA8 Financing
• AA9 Dissemination

The Action Group received 135 EIP commitments from:
• Regions
• Delivery organisations
• Patient / carer representative organisations
• Academia
• Industry

2.4.7 The Thematic Network “Momentum”

MOMENTUM (full title: “European Momentum for Mainstreaming Telemedicine Deployment in Daily Practice”) was a thematic network that has been committed to concentrating on the needs of what it calls telemedicine doers, a group that includes:

• Leaders in health or care authorities, hospital managers, clinicians or people involved in industry, such as entrepreneurs or business executives.
• All people supporting the telemedicine doers, such as public administrators, and personnel in innovation agencies and support organisations.
• All people who are actively involved in doing and deploying telemedicine.

MOMENTUM has focused on building stakeholder consensus on how precisely deployment can take place effectively at scale, how good practices can be gathered together and disseminated, and how a personalised European telemedicine deployment blueprint2 can be developed.

MOMENTUM produced a blueprint to describe a set of Critical Success Factors, targeted at everyone who wants to deploy a telemedicine service into routine care and to scale it up. 12

The following list provides an overview of all the MOMENTUM Critical Success Factors.

The context
1) Ensure that there is cultural readiness for the telemedicine service.
2) Come to a consensus on the advantages of telemedicine in meeting compelling need(s).

People
3) Ensure leadership through a champion.
4) Involve healthcare professionals and decision-makers.
5) Put the patient at the centre of the service.
6) Ensure that the technology is user-friendly.

Plan
7) Pull together the resources needed for deployment.
8) Address the needs of the primary client(s).
9) Prepare and implement a business plan.
10) Prepare and implement a change management plan.

12 The Momentum website (http://www.telemedicine-momentum.eu) includes many more descriptions of current telemedicine deployments, and welcomes more.
11) Assess the conditions under which the service is legal
12) Guarantee that the technology has the potential for scale-up.

Run
13) Identify and apply relevant legal and security guidelines.
14) Involve legal and security experts.
15) Ensure that telemedicine doers and users are privacy aware.
16) Ensure that the appropriate information technology infrastructure and eHealth infrastructure are available.
17) Put in place the technology and processes needed to monitor the service.
18) Establish and maintain good procurement processes.

These critical success factors form the core of a set of guidelines and indicators that can define an action plan for deploying telehealth in routine care and on a large scale. Several elements help doers to “progress with success” while implementing their telemedicine services, including:

- Critical success factors themselves.
- Lists of indicators and characteristics.
- Illustrations of how the 18 factors have been put into practice in seven concrete cases. The examples are from Germany, Israel, Italy, the Netherlands, Norway, Spain, and Sweden.

### 2.4.8 Summary of topics and the applicability of the methodologies within SaG

The following table provides a synthesis of the potential application of the methodologies and the approaches enumerated in the current chapter to the different kinds of evaluation to be performed within SaG.

<table>
<thead>
<tr>
<th>method objective of the evaluation</th>
<th>MAST</th>
<th>WSD</th>
<th>MAF</th>
<th>EIP</th>
<th>EIP-AHA</th>
<th>Momen tum</th>
<th>OECD Quality</th>
<th>OECD Tele-health</th>
<th>TBCPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI for health services</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>assumption on Integrated Care</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>market impact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>local tendering processes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>effectiveness of the local tendering processes</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>local evaluation of offers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>local deployment of the contract (1)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>suitability of the local tenders to effectively satisfy the respective local needs (1)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>usability of the SaG Template</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) to make the table more readable, it does not include the systems used to assess the changes in the state of the patients (e.g. ICF, InterRAI, FIM, SPARRA, ERLI, see 2.4.2). They may be used to measure the “local deployment of the contract” and/or the “suitability of the local tenders to effectively satisfy the respective local needs”.

For the kinds of evaluation not covered by available methodologies, the procurers will provide qualitative reports describing their experience according to common guidelines, developed later in the project and refined at the end of the Project according to the lessons learned.
3 Evaluation related to the PPI process applied to Integrated Care services

The Digital Agenda for Europe Portal\textsuperscript{13} introduces PPI as:

| The Public Procurement of Innovative solutions (PPI) can stimulate innovation by bringing innovative commercial end-solutions earlier to the market. |
| Contracting authorities can act as a launch pad for innovative goods or services which are not yet available on large scale commercial basis and may include conformance testing. |
| A strong and stable demand through government procurement can create demand long before a commercial market is established. This has several advantages: |
| ♦ By acting as the first buyer or lead customer, a contracting authority can boost a particular, new market. |
| ♦ The public benefits directly by being offered new and innovative public services that are provided in a more cost-efficient and effective manner. |
| ♦ PPI and Pre-Commercial Procurement can lead to scientific and technological breakthroughs in areas such as health and well-being, food security, sustainable agriculture or clean & efficient energy. |
| Under Horizon 2020, the Commission will co-fund groups of procurers to undertake joint PPI procurements in order to have a single joint PPI call for tender and a single joint evaluation of offers. This can speed up the development of innovative solutions by encouraging cooperation between procurers from across Europe, either by supporting networks of procurers (to prepare joint PPIs) or by co-funding the initial call for tender, the related coordination, and the networking activities. |

SaG has been launched in the ICT PSP 2013 and its findings will be used to produce recommendations regarding strengths and weaknesses of the PPI in the health sector under H2020. The lessons learned, as outputs from this work, will be a platform for developing new approaches on the adequate application of the instrument, related risks and challenges.

3.1 The peculiarity of the SaG PPI Pilot

SaG peculiarities, in comparison with other PPI projects, lay on:

• SaG focuses on care models and the related health services (instead of technology)
• SaG should support the activities of EIP-AHA, in particular Action Group B3
• SaG is an umbrella project spanning across several topics in the Integrated Care milieu; the diversity of regions and countries involved as procurers in SaG will make any outcome valid for any procuer in Europe.

3.2 Evaluation related to the use of PPI instrument for health services

This qualitative perspective of the evaluation regards the overall usability and suitability of the PPI instrument to satisfy the EU goals, i.e. the scaling-up the innovation on care services towards Integrated Care, synergic to the activities being performed by the EIP-AHA.

\textsuperscript{13}http://ec.europa.eu/digital-agenda/en/public-procurement-innovative-solutions
The consortium should provide a feedback to the Commission about the usability of the instrument in general, and in particular to promote the diffusion of tenders on services.

As one of the consequences, the measure of success of our PPI is not only related to the actual tenders made within the project, but it should also consider the exploitation by procurers outside the project: the PPI Pilot is an instrument intended to create a critical mass in the market.

Therefore in this respect during year 3 the consortium should collect letters from other procurers, to express at least an intent to use the EST for new tenders. It is also important to assess the reactions of the providers (e.g. how many/which kind of providers have sent a bid) in order to verify the effective impact of the PPI Pilot on the domain.

- how far the PPI tool can be applied to the services procurement?
- how far the PPI tool can be applied to services of integrated care?
- does it make sense to launch a single European tender (as suggested by the new EU guidelines)?
- for what kinds of goods and services does it make sense to make a single tender?
- assuming a single framework contract divided into lots, can one actually manage the local specificities of each individual procurer as characteristics of individual batches? or local solutions are homogeneous enough to be considered as a single batch of the framework agreement?

The lessons learned by SaG will be systematised for the benefit of future use on similar topics, to produce recommendations about strengths and weaknesses of the PPI in the eHealth sector and to suggest the optimal usage of the instrument, as well the risks and the challenges to be faced.

### 3.3 Evaluation related to the synergy with EIPonAHA activities and objectives

The EIPonAHA is pursuing a triple win for Europe:

- enabling EU citizens to lead healthy, active and independent lives while ageing;
- improving the sustainability and efficiency of social and health care systems;
- boosting and improving the competitiveness of the markets for innovative products and services, responding to the ageing challenge at both EU and global level, thus creating new opportunities for businesses.

SaG contributes to them all, but specially to the last one, opening completely new market opportunities. Public Administrations have traditionally been unable to integrate innovative solutions for care provision basically due to their purchasing mechanisms. SaG will contribute to open such remarkable markets to create a critical mass.

Several members of the consortium are members of Action Group B3, so the alignment will be kept naturally.

SaG is also linked to other PPI initiatives to maximize the impact of outcomes from them all.

### 3.4 Evaluation related to a multi-annual process towards Integrated Care

The assumption made in SaG is that the set-up and propagation of the innovative models requires a multi-annual process. Being part of a PAN European initiative will ease the process and the potential impact for future use elsewhere.
We assume that each country, each region, each locality decides upon its speed of adoption, according to the current level of innovation already deployed, the available resources, the demographic, epidemiological, social patterns, and the measurable benefits to be achieved.

In particular, the initial pathfinders in each Region will launch one or more tenders, with appropriate restrictions on:

- the areas to be involved, the patterns of clinical and social conditions, the age groups, etc.;
- the nature of the services to be provided (e.g. amount of anticipatory services to support patient engagement and adherence, tasks of various professional profiles).

It is expected that the process to extend all the innovative services to the entire territory and the entire target population will be periodically redefined.

SaG adopted an overall strategy which implies that each tender should be considered as a component of a long-term plan towards Integrated Care:

- Does it make sense the adoption of an approach with a progression of complementary tenders up to 2020?
- Does it make sense to have a number of different contracts with the same ultimate goal?
- It is reasonable the assumption of the EIPonAHA that the Regional Authorities should govern the local processes of innovation and the related scaling-up?

### 3.5 Evaluation of the market reaction

The ultimate goal of a PPI Pilot is to promote the diffusion of the Innovation, by stimulating an appropriate set of procurers to deploy a significant number of similar contracts.

In principle, the independence of the EST from any specific technological solution should facilitate the introduction of up-to-date innovative features in the offers.

To be considered as successful, the PPI should provoke two kinds of reactions by the suppliers:

- refine, harmonise and integrate the existing solutions
- invest in the development of new solutions

Therefore the local tendering processes are expected to report if:

- the participation of the suppliers to the tender was adequate, in number and quality of the bids?
- the specifications were able to properly identify the health services and stimulate the innovative solutions?
- was the market ready to comply with the requirements?
- the proposed solutions were really innovative?
4 Evaluation about the usability of the RBC and the EST in the procurement processes

The European Specification Template (EST) should lead to a cost-effective, sustainable and scalable model, oriented to care pathways and able to satisfy at the same time the managerial, organisational, clinical and technological perspectives, and suitable to be refined according to the context of any locality across Europe. The EST provides requirements to describe the classes of functionalities and the related packages of services, to achieve clearly defined clinical and social outcomes, which will be evaluated by appropriate Key Performance Indicators.

The EST is being submitted to a wide, open European consultation and then tested and validated by deployment in seven localities across four member states.

The EST will be harmonised across the local contexts of SaG procurers, to eventually provide a set of general guidelines and specifications to define:

- the different steps of the procurement process;
- the criteria to place the envisaged functionalities into classes that require similar packages of innovative health services, in addition to the "traditional" services already deployed;
- a description of the health services that are able to cope with the above functionalities to enhance coordination and proactive health maintenance, taking into account the suitable clinical pathways, the professional profiles, and the role of a Contact Centre;
- the classes of technological solutions (including domotics, mHealth, and the basic eHealth components) that could correspond to the above services;
- the criteria to assess the offers, to monitor the deployment of the contracts, to assess the Regional Programs, measuring the performance in terms of activities, results and outcomes.

The evaluation will be performed by each procuring organization in a comparable way according to a common approach and then compared, to extract lessons learned and thus to produce an improved release of the EST near the end of the project. Outcome information from this process will facilitate a better understanding for other potential procurers elsewhere in Europe.

4.1 Evaluation related to the improvement in the effectiveness of the procurement process

This kind of evaluation evaluates the process performed in each locality to identify the service needs, to describe the required functionalities of the technological solutions, to develop the business case, to produce the tenders and to activate the contracts.

According to the Reference Business Case (RBC), it starts with the identification of the needs for change in the care models and to reach a decision about the tender and its content, and goes up to the signature of the contract. Each locality could produce a report about the management of the process, the specific obstacles and their solutions, and about the usability of the material produced by the project, with suggestions to improve the generic description of the process in the RBC.

4.2 Evaluation of application of the EST as a whole

Each Procurer should describe their experience with the EST, working out its hidden presuppositions, proposing different arrangement of the topics and missing topics.
The experience on implementation of the EST by the local procurers will allow to differentiate what should be made locally and what should be “European”. The diversity of pilots would allow the identification of scenarios (in term of diseases, organizational models and technological functionalities) suitable for the production of customized templates. This process would also allow SaG to provide valuable information to policy makers and decisions makers.

4.3 Evaluation of application of RBC and EST in the tendering process

The Procurers should describe the usage of the RBC and the EST in their actual tendering process as applied in their local context, identifying minor and major variants with respect to the proposed process.

4.4 Identification of the difficulties in the appropriate identification of the service domain

The Procurers should describe if the domain of the services identified in their tenders is totally or partially coherent with the recommendations provided by the EST, suggesting how to deal with the differences.

4.5 Difficulties of applying the indicators

As a by-product, each locality could assess

- the easiness to acquire the variables needed to compute the values of indicators, and to feed them into the system (in a standardized way)
- their usability to manage the service provision
- their meaningfulness to plan the change of care models
- suggestions for improving the list of the potential indicators and their descriptions
- the convenience of being part of a group of European Procurers
5 Evaluation performed by the procurers in relation to a procurement process

The evaluation of the deployment of a local initiative implies three types of measures:

- to **assess the initiative as a whole**, in its adoption of an innovative model of health management, also through the procurement process by adopting measurement criteria to assess the effects of medium and long term on the care system (also after the end of the contract), as well as its contribution to the final goals of the regional Action Plan (if it is in place);
- to **assess the bids** and select the contractor according to technical and economical evaluation criteria;
- to **monitor the contract deployment** by adopting performance criteria that can also enable the adoption of performance based payment models, in the various phase of the deployment (set up, activation, running, end of the contract).

These measures shall be consistent with the dashboards that serve the region and the procurer organizations to monitor the development of their respective plans.

In fact, suitable subsets of measures will be used by different subjects to perform specific tasks:

- the policy makers will use a subset to produce their plans and to assess the progress of the initiatives;
- the managers will use a subset to control level of adoption and acceptance of innovation, reallocate resources, refine the care models, audit the service provision;
- the care professionals will use a subset for self-audit and to improve the care provision;
- the administration will use a subset to assess the performance of the contract and thus to deliver payments to the suppliers.

5.1 Measurements and KPIs

We adopted the rigorous assessment framework that has been developed in the domain of the management of European structural funds. According to the indicative guidelines on evaluation methods for the Programming Period 2007-2013 the progression of a local initiative (as a whole), can be assessed in terms of:

- **Result indicators** related to the direct and immediate effect on direct beneficiaries brought about by the initiative;
- **Impact indicators**, referring to the consequences of the initiative beyond the immediate effects. Two concepts of impact can be defined:
  - Specific impacts are those effects occurring after a certain lapse of time but which are, nonetheless, directly linked to the action taken and the direct beneficiaries.
  - Global impacts are longer-term effects affecting a wider population.

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14 The New Programming Period 2007-2013.INDICATIVE GUIDELINES ON EVALUATION METHODS: MONITORING AND EVALUATION INDICATORS. Working Document No. 2
To these indicators may be added measurements about the **means** that are put in place to achieve the results, i.e.

- **the milestones** that allow to assess the progress in the implementation of the contract within the initiative and
- **the output**, i.e. the indicators to describe the activities that are actually performed.

As examples of the adoption of this assessment framework in the EST, Table 2 below provides sets of indicators directly related to two classes of Smart Functionalities enabled by technology that may be the building blocks to compose the innovative models:

- To make the professionals reciprocally aware of contacts and health problems of a patient;
- To proactively organise the activities of an individual care plan (Care Management).

Each type of indicator takes a different role and meaning for each of the three types of measurement considered (bids, contract and initiative) as it is detailed in the following sections.

### Table 1. Examples of indicators directly linked to a class of Smart Functionalities

#### Structural measure related to the class COL.F2a

**To make the professionals reciprocally aware of contacts and health problems of a patient**

In order to behave coherently, the Functional Cluster around the patient should be aware of the respective activities and goals. To this aim, the contacts and the health problems should be timely tracked and the information should be timely made accessible to the involved professionals, according the his/her specific profile. Ideally the performed activities should be compared to the ongoing individual care plan, and alerts should be generated in case of abnormalities.

**Milestone (for the service deployment)**

- distribution of the number and role of professionals involved in the management of a care plan
- number of patients (and informal care givers) enrolled in the program

**Output**

- number of tracked contacts
- number of tracked health problems
- number of accesses by professionals to the log of contacts and health issues (by professional profile) (by health issue) (by type of information that is considered)
- number of alerts generated (by type of action required)
- number of alerts that have resulted in significant actions (by type of action required)

**Results**

- rate of enrolled patients (and informal care givers) satisfied with the program
- rate of involved professionals satisfied with the program

**Impacts**

- variation in the rate of inappropriate drug prescriptions
- variation in the rate of inappropriate diagnostic test prescriptions
Structural measure related to the class COL.F1c

To proactively organise the activities of an individual care plan (Care Management).

Usually the Care Manager is a skilled nurse, with the role of proactively assisting the patient and the caregiver in complying with the care plan.

**Milestone (for the service deployment)**
- number of Care Managers involved
- number of patients enrolled

**Output**
- number of Care Managers available, in person-hours / week
- average number of patients enrolled per employee
- number of calls performed in total (daily or weekly)
- number of problems encountered (by type of patient) (by severity) (by urgency)
- number of reports made about unforeseen events (by problem type)

**Results**
- rate of enrolled patients (and informal care givers) satisfied with the program
- rate of involved professionals satisfied with the program

**Impacts**
- variance in the degree of adherence of the patient to the own care plan (by problem type) (by type of therapy)

### 5.2 Criteria to measure and assess a local initiative

The assessment of a local initiative should be oriented to verify its capability to satisfy the strategic objectives pursued through its implementation, and it should be based on validated methodologies able to support the presence of a causal relationship between the activities performed (in other words the initiative) and the expected strategic results.

In this perspective pre-existing initiatives such as MAFEIP (the Assessment Framework for the European Innovation Partnership on Active and Healthy Ageing) and Model of Assessment of Telemedicine (MAST, a framework developed by previous EU initiatives and already applied in Renewing Health and United for Health) in conjunction with other acknowledged methods represent the building block of the system of measurement of a local initiative included in the EST.

### 5.2.1 The KPIs proposed by MAFEIP

MAFEIP (Monitoring and Assessment Framework for the EIP on AHA) is a monitoring framework, developed by IPTS in cooperation with DG CNECT and DG SANCO, to assess the evolution and impact of the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA), as well as the outcome and output of the Action Groups within the EIP on AHA.
Figure 1. The MAFEIP framework

Consequently it represents a powerful instrument to assess the capabilities of local initiative, aiming at implement the EIPonAHA strategy as those promoted by the EST, to contribute to the realization of the Triple Win (quality of life; sustainability of health and care systems; and, innovation and growth) and the overall objective of increasing by two additional healthy life years the average healthy life span of European citizens by 2020.

The multidimensional approach of the monitoring framework for the EIP on AHA entails a set of building blocks which contain different outcome indicators to monitor the factors influencing the Triple Win, for example:

- Quality of life of patients/users, this may include changes in risk factors, nutrition or physical activity
- Sustainability of health and care systems, changes in hospital admissions, or a shift towards home care instead of institutionalisation
- Innovation and growth possibilities, new employment opportunities.

Not all individual initiative may contribute to all building blocks; however, each individual action that share the objectives of EIPonAHA should contribute to at least one building block.

In line with this approach, the assessment of local initiatives “EST compliant” is based on their capacity to directly or indirectly contribute to one or more KPIs proposed by the MAFEIP framework. The following figure highlights for each class of functionalities included in the EST its capability to influence the KPIs of MAFEIP (expressed as L=“low”, M=“medium” and H=“high”).
**Figure 2. Mapping the classes of Smart Functionalities versus the KPI dimensions in the MAFEIP framework**

<table>
<thead>
<tr>
<th>Functionalities</th>
<th>COL: Collaboration among the parties in the innovative model of health management</th>
<th>ACT: Activation of patient and caregiver and promotion of independent living</th>
<th>DEC: Strategic, managerial and clinical decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>COL.F1</td>
<td>To manage the individual care plan</td>
<td>L  L  M  M  M  L  L  L  L  L</td>
<td>L  L  M  M  M  M  M  M  M  M  M  M  M  M  M  M</td>
</tr>
<tr>
<td>COL.F2</td>
<td>To catalyse the collaborative tasks among the professionals</td>
<td>L  L  M  L  L  L  L  L  L  L</td>
<td>L  L  M  M  M  M  M  M  M  M  M  M  M  M  M  M</td>
</tr>
<tr>
<td>COL.F3</td>
<td>To enable remote processes</td>
<td>L  L  L  M  L  L  L  L  L  L</td>
<td>L  L  L  M  M  M  M  M  M  M  M  M  M  M  M  M</td>
</tr>
<tr>
<td>COL.F4</td>
<td>To coordinate the transition between care settings</td>
<td>L  L  L  L  L  L  L  L  L  L</td>
<td>L  L  L  L  L  L  L  L  L  L</td>
</tr>
<tr>
<td>ACT.F1</td>
<td>To manage general information and knowledge</td>
<td>L  L  M  L  L  M  L  L  M  L</td>
<td>L  L  M  M  M  M  M  M  M  M</td>
</tr>
<tr>
<td>ACT.F2</td>
<td>To assist the patient and the caregiver in health management</td>
<td>L  L  M  H  M  M  H  M  M  L</td>
<td>L  L  M  M  M  M  M  M  M  M</td>
</tr>
<tr>
<td>ACT.F3</td>
<td>To make the environment more suitable for the patient</td>
<td>L  L  H  M  M  M  M  M  H  M</td>
<td>L  L  M  M  M  M  M  M  M  M</td>
</tr>
<tr>
<td>DEC.F1</td>
<td>To manage analytics by dashboards and reports</td>
<td>L  L  L  L  L  L  M  L  L  M</td>
<td>L  L  M  M  M  M  M  M  M  M</td>
</tr>
<tr>
<td>DEC.F2</td>
<td>To strengthen clinical decisions</td>
<td>L  L  M  M  M  M  M  L  M  M</td>
<td>L  L  M  M  M  M  M  M  M  M</td>
</tr>
</tbody>
</table>

**KPIs about Quality of Life**

- **Primary indicators**: HiQoL, Morality, Risk factors, Adherence, Functional status, Nutrition, Cognitive decline, Physical activity, Frailty, Falls, Mental health.

**KPIs about Sustainability**

- Incremental change in resources used $X$ (Local) unit cost for resources.

**KPIs about Innovation and Growth**

- N. of implemented technologies, N. of users of technologies, N. of created jobs, N. of new SMEs.
5.2.2 MAST

MAST is an assessment framework and tool developed by MethoTelemed project with the aim to provide a structured framework for assessing the effectiveness and contribution to quality of care of telemedicine applications. MAST proposes an approach to the assessment as a multidisciplinary process that summarises and evaluates information about the medical, social, economic and ethical issues related to the use of telemedicine in a systematic, unbiased, robust manner.

The MAST methodology, as instrument of Health Technology Assessment can support the decision-making regarding the identification of telemedicine solutions more suitable to implement the functionalities that make innovative a model of health management. Moreover, MAST can support the ex post evaluation by providing a guide to the assessment of the effectiveness of the performed implementation.

According to the MAST methodology the different outcomes can be divided into 7 groups or domains:

- Health problem and characteristics of the application
- Safety
- Clinical effectiveness
- Patient perspectives
- Economic aspects
- Organisational aspects
- Socio-cultural, ethical and legal aspects

For each of the seven domains the MAST framework proposes a number of measures of outcomes used in studies of telemedicine applications.

These are also included in the MAST Toolkit (www.telemed.no/methotelemed), a tool that makes it possible for those who are planning an assessment of a telemedicine application to use the MAST as a checklist.

For each functionality adapted to the local context (e.g. target population, operational rules) is it possible to identify the sub-set of indicators to assess the telemedicine initiative.

5.3 Technical and economic scoring criteria to assess the bids

The PPI Pilot requires that the tender is awarded to the most economically advantageous offer; appropriate criteria should be declared in the local tender, to explain how the bids will be assessed – i.e. the relevance of the technical and economic aspects (for example split 60%/40%) and the assessment criteria for scoring the technical quality of the bids.

According to the Public Procurement Guidance for Practitioners published by the European Commission\(^{15}\) tender evaluation should:

\(^{15}\)European Commission, 2014 Public Procurement Guidance for Practitioners
• have award criteria that are weighted to reflect importance/priority and are focused on the requirements of the specification (no weighting by lowest price);

• be relevant to the subject matter of the contract;

• preferably be based on a model that takes into account a balance between price and quality where price is the dominant criteria in %. Care must be taken to ensure that the price/quality split reflects the requirements of the contract.

A procurer may take into account various criteria to determine the MEAT that have not to be mixed with the criteria to perform the preliminary selection of the economic operators\(^\text{16}\).

Article 67(1) of Directive 2014/24/EC contains an illustrative list of these criteria, which are as follows:

• quality, including technical merit, aesthetic and functional characteristics, accessibility, design for all users, social, environmental and innovative characteristics and trading and its conditions;

• organisation, qualification and experience of staff assigned to performing the contract, where the quality of the staff assigned can have a significant impact on the level of performance of the contract; or

• after-sales service and technical assistance, delivery conditions such as delivery date, delivery process and delivery period or period of completion.

However, other criteria may be added according to the nature of the contract. In particular, in PPI may be included:

• the degree of innovation of the proposed solutions and their scalability

• the use of interoperability standards and the ability to fit (both functionally and technically) with the other technological components provided by the procurer organization

The evaluation of the offers raises a number of questions:

• which the criteria should be considered to pre-qualify the offers ("if you do not have them, then your offer is excluded from the assessment")?

• how to give a systematic, objective score to the technological solutions proposed?

• which is the most appropriate distribution of the scores related to the services offered, the technologies, the economic factors?

• what is the best weight distribution between economic and technical components in a most economically advantageous approach (eg. 60/40, 70/30 ... or more complex formulas)?

• how to assess the expected synergy of the acquired services with the buyer’s ones?

• how to evaluate the effectiveness of the proposed solutions on interoperability?

• how to evaluate the level of innovation of the offers?

• what is the overlap with the KPI used in the evaluation of the performance of the contract?

\(^{16}\) While selection is about determining which economic operators are qualified to perform the contract to be awarded, the award criteria is about the assessment of the tenders.
5.3.1 Criteria for scoring the bids

The evaluation methodology used in each locality depends on the regulations and customs valid for any other tender. The particular criteria adopted should depend on the nature and complexity of the procurement.

The methodology selected should enable the Evaluation Committee to objectively and transparently determine which tender offers best value for money by addressing:

- the degree to which a tender meets qualitative criteria;
- life-cycle costs;
- the level of risk associated with selecting a particular quotation; and
- the weightings and scoring methodology for each criteria.

Here is a simplified example of possible criteria for the assessment of the bid, where the **Total Score** is the sum of an **Economic score** and a **Quality Score** (maximum 100 points). In this case the decision was to fix a maximum of 40 points for the Economic Score ES and of 60 points for the Quality Score QS.

The **Economic Score ES** for the offer A is calculated as follows:

\[ ES(A) = \text{price}(C) \times 40 / \text{price}(A) \]

where price(C) is the price of the cheapest offer.

The **Quality Score QS** for the offer A may be calculated as follows:

\[ QS(A) = \sum [W(i) \times V(A, i)], \] with i ranging from 1 to n, where:

- i: item being assessed (listed below)
- n: total number of the items to be assessed, in this case: n=7
- W(i): weight of the item i-th
- V(A, i): rating of the offer A for the item i-th

Continuing with the example, the weights of the items may be as follows, with a set of specific items (numbered here as 4, 5, 6) inspired by the classes of Smart Functionalities:

<table>
<thead>
<tr>
<th>i</th>
<th>Item i-th</th>
<th>Weight W(i)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Organization, logistics and timing of interventions</td>
<td>...</td>
</tr>
<tr>
<td>2</td>
<td>Staff turnover / insurance and risk prevention</td>
<td>...</td>
</tr>
<tr>
<td>3</td>
<td>Skills and experiences of health professionals</td>
<td>...</td>
</tr>
<tr>
<td>4</td>
<td>ICT solutions on coordination and monitoring of activities related to service delivery</td>
<td>...</td>
</tr>
<tr>
<td>5</td>
<td>Innovative services provided remotely through digital technologies including home tele-monitoring</td>
<td>...</td>
</tr>
<tr>
<td>6</td>
<td>Promotion of self-management of patients and their caregivers</td>
<td>...</td>
</tr>
<tr>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>..</td>
<td>Additional not onerous improvement of the services (if any)</td>
<td>..</td>
</tr>
</tbody>
</table>
The rating $V(A, i)$ could use the following scale:

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>excellent</th>
<th>Good</th>
<th>Fair</th>
<th>Enough</th>
<th>not adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>1,00</td>
<td>0,75</td>
<td>0,50</td>
<td>0,25</td>
<td>0</td>
</tr>
</tbody>
</table>

The offer with a rating “not adequate” even for only one of the items (except item k) will be marked as “rejected” and will not continue the assessment.

Note:
- Items 1, 2, 3, k are generic and may be applied to any tender.
- Items 4, 5, 6 are specific for the STOPandGO framework and they could be taken from a common harmonised list with an appropriate specialisation. Each procurer could select and adapt one or more items according to its local context.

5.4 Evaluation related to the local deployment of the contract

Each locality could produce a report on the evaluation of the services provided, according to KPIs agreed between the procuring organization and the supplier. SaG is suggesting a schema for the definition of different series of KPIs, respectively related to:
- the monitoring and evaluation of the service delivery;
- the assessment of the patients and professionals satisfaction.

These indicators will be refined in the local tender and finally fixed in the contract, giving suggestions to improve the content of the EST for the final release in 2018.

5.4.1 Criteria about the interim payments

It is envisaged that most contracts will consider a progression of intermediate payments based on relatively simpler criteria, e.g. on the activities performed (pay-per-service), even if a relevant quota could be reserved to outcome-based payments. In addition, penalties could be foreseen in case of low quality of service provision. Therefore the project will monitor which kind of approach is followed in each locality, and how are arranged:
- the criteria for interim payments based on output
- the penalties for not satisfying the SLA – Service Level Agreements

5.4.2 Criteria about payments based on final performance and outcomes

The project will survey how each locality will manage the pay-for-performance requirements.
- the criteria to assess the performance levels
- how to differentiate the contribution of the supplier from the resources of the buyer?

5.4.3 Criteria to monitor performance and pay on results

During the contract management the dimensions to be assessed are:
- the progress achievements over time (milestones), e.g. during the service set-up;
• the output produced (per unit of service of good delivered, per capita, etc.); as well as
• the quality of the services/goods delivered, based on Service Level Agreements.

The Nordic Care Group during the STOPandGO Consortium Meeting mentioned the following classes: Resources, Productivity, Output, Outcome, Value.

The outcome/impact assessment during the contract management can results extremely complex at least for two reasons:

• the indirect systemic benefits, as the clinical/economical indicators and impact indicators, typically require a very long period of deployment to reach their optimal level and are related to the model in its entirety, i.e. it is difficult to attribute them to each single structural measure or to a specific activity performed by the supplier, and the assessment of the impact require time longer than the contract duration;

• In the presence of complex models of health management in which the services provided by the suppliers are combined with those provided by other players (e.g. professionals included in the human capital of the procurer) and/or the patients may have a significant role in the success of the model is not possible to isolate the contribution of the supplier to the obtained outcomes. For instance, the increase of patient's adherence to the treatment plan when included in a care programme based on pro-active services and coaching provided with the support of telemedicine is inevitably influenced by the attitudes and behaviour of the patient and not only by the quality of the program put in place by the provider. When the obtained outcomes don’t depend exclusively by the activities performed by the supplier, the evaluation of the contractor should be based on the outputs and the quality of the service delivered.

These considerations become even more significant when is planned the adoption of forms of payment performance-based, as evidenced in the following section.

5.4.3.1 The approach of Pay-for-Performance (P4P)

There are several approaches to the payment for the services, including the P4P and the fee-for-service, and to the financing arrangements. These approaches are e.g. payment per capita (a predefined quota for each enrolled patient) or per episode of care (e.g. the hospital DRGs) or Outcome-based pricing (“the price paid is based upon the actual tangible business impact it provides to the customer” [17]).

Other more global approaches are available, based on financing and risk-sharing, like the Public–Private Partnership (PPP):

“a government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies.

These schemes are sometimes referred to as PPP.

PPP involves a contract between a public sector authority and a private party, in which the private party provides a public service or project and assumes substantial financial, technical and operational risk in the project.” [18]

The P4P was introduced as a mechanism to reward quality and efficiency in the service provision. Several definitions are available with regards of P4P. For example, here is the definition from US:

17 see for example http://www.pwc.com/us/en/advisory/customer/outcome-based-pricing.html
“P4P incentive programs are designed to overcome the limitations of current reimbursement arrangements by aligning financial reward with improved outcomes. P4P incentive programs differentiate payment among providers based on performance of quality and efficiency measures so that desired outcomes occur through changed behaviour.” [19]

Another definition, more specific, is the one used by the American Medical Association, applied to the individual physicians:

“Under a “pay for performance” (PFP) approach, a health insurer or other payer compensates physicians according to an evaluation of physician performance, typically as a potential bonus on top of the physician’s fee-for-service compensation. The payer bases its evaluation on the data it has on that physician or physician group—most commonly, administrative or claims data which measures the quality and/or cost of care. Patient satisfaction data may also be a factor.

Using these data, the payer then rates the physician or physician practice according to the payer’s own criteria. Those physicians who meet the payer’s targets may receive perks such as bonus payments.” [20]

Note that in this vision P4P could be used as a “potential bonus on top of the physician’s fee-for-service” and that it could be a mix of measurements on the direct activity performed by the professional and of patient satisfaction data.

According to Wikipedia,

“Pay for performance in healthcare gives financial incentives to clinicians for better health outcomes. Clinical outcomes, such as longer survival, are too difficult to measure, so pay for performance systems usually measure process outcomes, such as measuring blood pressure, lowering blood pressure, or counselling patients to stop smoking.” [21]

Note that this interpretation makes a few examples of measures on what they call as “process outcomes”, even if “measuring blood pressure” and “counselling patients to stop smoking” are acts that see the performance as adherence to the clinical pathway and should not be considered as “outcomes”.

In UK a Pay-for-Performance program for family practices was introduced in 2004: a paper published in 2006 [22] presents the initiative and reports examples of the original Quality Indicators from 10 clinical domains (see the table in the next page).

In this case it is clear that outcomes measures are used only in limited cases where the clinical outcomes achieved are determined exclusively by the actions carried out by the professional, e.g. the level of blood pressure in the diabetic patient. When, instead, the clinical results may depend

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on other factors output indicators are selected. In other words, in this case the professional's actions and its behaviour are considered suitable for achieving the expected outcomes.

**Figure 3. Examples of quality indicators and scoring criteria from “Pay for Performance Programs in Family Practices in United Kingdom”**

<table>
<thead>
<tr>
<th>Clinical Domain</th>
<th>Indicator No.</th>
<th>Description</th>
<th>Points</th>
<th>Payment Range (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma</td>
<td>6</td>
<td>The percentage of patients with asthma who have had an asthma review in the previous 15 mo</td>
<td>0–20</td>
<td>25–70</td>
</tr>
<tr>
<td>Cancer</td>
<td>2</td>
<td>The percentage of patients with cancer (diagnosed since April 1, 2003) reviewed within 6 mo of confirmed diagnosis, including assessment of support needs and review of coordination arrangements with secondary care</td>
<td>0–6</td>
<td>25–90</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>3</td>
<td>The percentage of patients with chronic obstructive pulmonary disease in whom diagnosis has been confirmed by spirometry and reversibility testing</td>
<td>0–5</td>
<td>25–90</td>
</tr>
<tr>
<td>Coronary heart disease</td>
<td>6</td>
<td>The percentage of patients with coronary heart disease whose last blood pressure measurement (within the previous 15 mo) was 150/90 mm Hg or less</td>
<td>0–19</td>
<td>25–70</td>
</tr>
<tr>
<td>Diabetes</td>
<td>12</td>
<td>The percentage of patients with diabetes whose last blood pressure measurement was 145/85 mm Hg or less</td>
<td>0–17</td>
<td>25–55</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>4</td>
<td>The percentage of patients 16 years of age or over receiving drug treatment for epilepsy who have been convolution-free for the previous 12 mo</td>
<td>0–6</td>
<td>25–70</td>
</tr>
<tr>
<td>Hypertension</td>
<td>5</td>
<td>The percentage of patients with hypertension in whom the last blood pressure measurement (within the previous 9 mo) was 150/90 mm Hg or less</td>
<td>0–56</td>
<td>25–70</td>
</tr>
<tr>
<td>Hypothyroidism</td>
<td>2</td>
<td>The percentage of patients with hypothyroidism with thyroid function tests recorded in the previous 15 mo</td>
<td>0–6</td>
<td>25–90</td>
</tr>
<tr>
<td>Mental health</td>
<td>2</td>
<td>The percentage of patients with severe long-term mental health problems reviewed in the preceding 15 mo, including a check on the accuracy of prescribed medication, a review of physical health, and a review of coordination arrangements with secondary care</td>
<td>0–23</td>
<td>25–90</td>
</tr>
<tr>
<td>Stroke</td>
<td>8</td>
<td>The percentage of patients with transient ischemic attack or stroke whose last measured total serum cholesterol level (within the previous 15 mo) was 193 mg per deciliter (5 mmol per liter) or less</td>
<td>0–5</td>
<td>25–60</td>
</tr>
</tbody>
</table>

* Points are awarded on a sliding scale within this range. For example, for asthma indicator number 6, practices must review at least 25 percent of registered patients with asthma to gain any points and review 70 percent or more to gain the maximum 20 points.
6 Evaluation related to the suitability of the initiative to effectively satisfy the local needs

The evaluation of the success of the deployment performed by the supplier to effectively satisfy the local needs will be measured by a number of indicators of outcome and impact. They will consider the improvement of the indirect outcomes for older people with various long-term conditions, including:

- Improving their experience of health and social care services
- Empowering them and their caregivers to manage their own conditions
- Revising the general use of Health and Welfare services, GP visits, etc.
- Reducing their number of unplanned admissions
- Reducing their number of readmissions to hospital and long term care
- Reducing their lengths of stay in hospital
- Improving their transition between primary and secondary care

6.1 Criteria about the effects of the initiative on the healthcare and social system

The results of the PPI Pilot are also expected to provide further recommendations for the implementation of technological solutions for the management of chronic diseases and frail people, focusing on their effectiveness as well as cost-effectiveness of services. A qualitative assessment will be performed by each local procurer on the effects of the program on the system as a whole:

- were the needs properly identified in the local business case?
- the initiative has satisfied the identified needs?
- are there unexpected positive or negative effects?
- the improvement of quality of care related to the adoption of telehealth solutions
- the sustainability of the initiatives
- the a posteriori analysis of the actual costs and benefits of telehealth solutions

6.2 Criteria about the effects of the contract on the users

There are various categories of users, including the care professionals, the health care managers, the citizens/patients, the caregivers.

It is possible to assess the effect of an initiative under different perspectives, e.g.:

- the satisfaction of the citizens
- the improvement of the adherence of citizens to their individual care plans
- the benefits to the informal caregivers
- the satisfaction of the professionals
- the improvement of the productivity of the professionals
The project will bring forward a pragmatic approach, in order to build a robust and comprehensive list of indicators (compact and easily applicable at the same time) for the care services, especially with regards to all aspects of eHealth technology issues.

A set of indicators may have an additional application in the context of the policy decisions by the procuring organizations.

Some examples of indicators, mainly healthcare related, that could be monitored, organized according to the policies of the procurer are listed in the relevant section in the EST.

It may be also the case that a local decision maker has the need to stimulate the consensus and the involvement of the local stakeholders and to promote its multi-annual action plan and the innovative models of care.

In this case it might be useful to perform a survey on the satisfaction of professionals and / or citizens, in addition to the quantitative assessments on the benefits arising from the contract. That survey may be carried out either by the procurer organisation, or by the vendor, or by a third party. 

In synthesis:

| The effort of WP6 of SaG involves the calculation of a number of indicators; however for the purpose of the project the evaluation is not aiming at the demonstration of the efficacy of the services, but rather on the lessons learned on the usability of those indicators by the managers to improve the care delivery. |
| Therefore the reports produced by the partners will need to primarily describe the experience of the professionals and the managers with the indicators, in addition to the “usual” tables with the actual values of the indicators. |
7 The actual criteria adopted by the STOpandGO procurers

7.1 Liverpool

The purpose of the strategy is to recommission personal care services for adults and older people across Liverpool and also to recommission community support services and day opportunities for Older People across the city. The aim is to bring all of these services together under one contractual arrangement called "Liverpool's Help to Live at Home Service."

The new service will introduce innovative technologies to help deliver the services to improve quality and ultimately reduce costs.

Against a background of reduced budgets the demand for the Domiciliary Care is increasing. The number of people over the age of 85 has increased significantly over the past decade, with a 10% increase in those people aged 80-84, and a 17% increase in those aged over 85. Currently the average age of service users receiving a personal care service is 79 years, with 87% of the service user population being over the age of 65 years. Two thirds of services users are aged between 75-94 years.

Not only have the volumes increased but the needs of the service users have become more complex. The demographic pressures on the secondary care service mean that there is a real pressure for hospital beds and people are being discharged back into the community with more complex health issues that the carers are increasingly being asked to provide care for.

There is also a shortage of carers within the city to meet the increased demand.

We have tried to encourage the care providers to innovate and introduce technology into the service but have met with a cultural resistance as well as the Authority not being able to fund the technology.

7.1.1 The envisaged innovative care model TO BE for the local initiative as a whole

As we were starting with very little or no technology within the service we initially hoped the S&G programme would breakdown some of the cynicism of the care providers about what technology can do and introduce technology at scale to improve the quality of the service.

The individual provider businesses chose which technology they wanted to introduce into their business and we agreed we would evaluate which provides the best outcomes and we would look to roll that across the city. In reality there was a limited range of identified technology requested. There was a group of people who asked for Webroster technology which is an electronic staff rostering system with an innovative mobile app that the carers use. This can link seamlessly with the PASS case management system which is a digitalised care case management system that gives real time details of activity.

The PASSsystem is a digital care plan system that provides a single view of care records from enquiry, assessment, medication and task changes and reviews – meaning less time printing and disseminating, less time duplicating notes and less time on administration. Using The PASSsystem’s care management platform to update the care plan ensures Care Workers are notified of medication and task changes in real-time – NO NEED to print paper copies – it’s all on Care Workers’ phones.
The carer uses a mobile phone app to swipe a Q code on the care plan in the service user’s home and they get a list of activities they have to complete. As each activity is completed they swipe that the task is completed and if there is any variance they type in the reason e.g. the service user is being taken out for lunch by son etc, Please see the screen shot that the carer sees below:

If for example the service user refuses to comply with medication the carer can highlight this on the app and the main office gets an alert in real time and can resolve the issue to reduce the risk of hospitalisation. Below is a screen shot from the office monitoring screen.

The other technology requested was the introduction of a cloud based sensor monitoring system using LoRaWAN frequencies. The masts required for this technology are being rolled out in the city as part of a Sensor City programme and we will introduce the Internet of Things sensors to help keep people independent longer by working with the paid carers and family members.

7.1.2 The topic for the tender

The specification was very broad and did not make detailed specifications on the type of technology required. Below are the words within the specification:

The domiciliary care market is by its very nature labour intensive, there have traditionally been very little innovative technological solutions for this market.

The following areas have been identified as areas where the advancements in new technology could assist in. This is not an exhaustive list and any technological products that can improve the quality and safety of services and service users are welcome:-

- workforce management
- lone worker protection
- compliance management
- integration
- assistance with daily living tasks
The actual spend is on the introduction of:

- Rostering software
- Case management software and licences
- Tablets for care managers who do the care plan with the service user within their home
- Dongles
- Smart Mobile phones for the carers
- The Internet of things sensors

### 7.1.3 Awarding criteria

The awarding procedure was based on the following explicit criteria.

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Technical Criteria</th>
<th>Max Words</th>
<th>Percentage Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Setting Up and Implementation</td>
<td>500</td>
<td>5.00%</td>
</tr>
</tbody>
</table>
| 1.1             | Set out in detail how you would set up and implement the Service (set out in the form of an Implementation Plan). Your plan should cover the period from award of the contract to month 12 of operation and should include, as a minimum, the following: Include how you would establish the service; timescales in terms of recruitment of staff (and volunteers if you plan to work with volunteers) and how quickly the service will be in operation.  
  - key milestones  
  - lead times  
  - communications  
  - premises/office base  
  - any barriers to implementation and how these will be addressed  
  - progressive performance targets for the first 12 months | 500   | 5.00%                |

**Response:**

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Technical Criteria</th>
<th>Max Words</th>
<th>Percentage Weighting</th>
</tr>
</thead>
</table>
| 2               | Management, Operation and Delivery of the Service  
  (NB. If you intend to sub-contract (or you are part of a consortium bid) then you must detail how you intend to manage those aspects of provision clearly in your responses). | 250   | 5.00%                |
| 2.1             | How will you provide appropriate leadership and management to ensure the service reaches the required standards and remains responsive to changing national requirements and local needs? | 250   | 5.00%                |

**Response:**

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Technical Criteria</th>
<th>Max Words</th>
<th>Percentage Weighting</th>
</tr>
</thead>
</table>
| 2.2             | How will you ensure sufficient capacity to take on all care packages the Council will commission in the locality or localities you are tendering for?  
  How will you ensure that you are able to take on services in timely manner and within the response times set out in the Service Specification? | 500   | 8.00%                |

**Response:**

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Technical Criteria</th>
<th>Max Words</th>
<th>Percentage Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3</td>
<td>How will you ensure continuity and consistency of care for Service Users?</td>
<td>250</td>
<td>5.00%</td>
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</table>

**Response:**
| 2.4 | How will you ensure you will acquire and maintain knowledge of the locality or localities to maximise the effectiveness of the service you provide? | 250 | 3.00% |
| 2.5 | What measures will you take to ensure the service meets the needs of the Service Users in the locality, for example: | | |
| | • need for gender specific services | 500 | 5.00% |
| | • double cover packages of care | | |
| | • responding to needs for time critical calls | | |
| | • culturally sensitive services e.g. language requirements, observance of faith, culture and customs | | |
| | • meeting access needs of disabled Service Users | | |
| | • any challenges presented by location/geography | | |
| | • meeting the needs of Service Users with more complex needs e.g. dementia | | |
| 2.6 | Set out your approach to delivering community based re-ablement provision, addressing the following areas: | 750 | 8.00% |
| | • How you will provide a flexible, person centred approach to care, as part of a multi-disciplinary re-ablement package where appropriate | | |
| | • How you will manage the overall “budget of hours” approach to support the Service User over a 4-6 week period to support re-ablement and a pro-active reduction in the care required | | |
| | • How you will approach reviewing the individual (in liaison with appropriate care and health professionals) to proactively reduce the care package and ensure continuity should a long term care package be required at the end of the re-ablement period | | |
| | • How you will train and mobilise Staff to support the increased focus on, and success of, a reablement approach | | |
| 2.7 | Please set out your approach to delivering an MDT approach to care | 250 | 3.00% |
| 2.8 | How will you ensure staff provide an enabling and flexible approach to service delivery to meet Service User changing requirements? | 250 | 3.00% |

### Staffing and Workforce Matters

| 3.1 | Please describe how your organisation proposes to commit to being a best practice employer in respect of ‘workforce matters’ in the delivery of this contract. | 500 | 5.00% |

Good answers will reassure evaluators that your company takes the engagement and empowerment of workers seriously; takes a positive approach to rewarding workers at a level that can help tackle poverty (e.g. through a commitment to paying at least the living wage); adopts fair employment practices, provides skills and training which help workers fulfil their potential, that you do not exploit workers (e.g. in relation to matters such as the inappropriate use of zero hours contracts or “umbrella” companies); and that your company will demonstrate organisational integrity with regards to the delivery of those policies, including having arrangements in place to ensure effective employee representation. This reassurance should be achieved by providing tangible and measurable examples that can be monitored and reported during contract management procedures.

| 3.2 | How will you recruit and retain a suitably skilled workforce (include how you will overcome barriers recruitment and retention) | 250 | 5.00% |
### Response:

3.3 What mechanisms will you put in place to cover planned and unplanned absence?
- What will you approach be to staff sustainability to ensure the capacity is available and services continue to be provided at required levels during peak times e.g. holiday periods, winter pressures?  
  
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### Response:

3.4 How will you ensure your workforce that reflects the locality in which services are to be delivered?

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<td>250</td>
<td>4.00%</td>
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### Response:

3.5 Please supply a high level organisational chart and a detailed chart showing the proposed Staffing structure for the service.

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</table>

(Respond via uploaded attachment)

3.6 Please outline how you will support, supervise, and develop staff.
- Also, set out clearly what training you will provide including targets for percentages of staff to complete specific training and the timescales during which this will be completed.

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<tr>
<td></td>
<td>500</td>
<td>6.00%</td>
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</table>

### Response:

4. **Performance Management and Quality Assurance**

4.1 Please note that you will be required to deliver your response to this question in the form of a 15 minute presentation to a panel of evaluators and service user representatives (see timetable for dates):
- How do/will you involve and engage Service Users in the delivery of services and use their feedback to improve services?

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(No written response required – full details of the date, venue, time and equipment available for the presentation will be made available in due course)

4.2 Please set out your proposed mechanisms for auditing and reviewing the service to ensure quality and deliver continuous improvement in line with the relevant standards, including your approach to participating in quality and compliance visits by the Authority.

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<td>300</td>
<td>4.00%</td>
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</table>

### Response:

4.3 Set out your proposed arrangements for procedures for dealing with comments, complaints and problems about the Service from customers/service users to whom the Service is provided.

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<tbody>
<tr>
<td></td>
<td>500</td>
<td>4.00%</td>
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</table>

### Response:

5. **Business Continuity**

5.1 Provide a plan for dealing with risks and contingencies in relation to both your proposed setting up arrangements and development of the service and the on-going delivery of the service. Your plan should:
- a) Identify potential risks that may disrupt setting up arrangements or service delivery (e.g. unexpected difficulty in recruiting a Key Staff member, failure of IT equipment etc).
- b) Describe how your organisation would respond to those risks
- Include action plans and timescales for resumption of normal operations

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<td>Upload Attachment 5.00%</td>
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</table>
6 Social Value

6.1 The Council is keen to understand what additional social value can be delivered through our procurement processes. Please articulate how you will support The Council in achieving its priorities and what Social Value you can bring to this Contract. Please indicate in the form of SMART (specific, measurable, achievable, reviewable, time limited) objectives where appropriate

This may include some of the area below (but is not limited to those listed):
- Creation of local employment opportunities
- Creation of apprenticeships
- Sustaining employment
- Creation of volunteer opportunities
- Procuring goods and services locally
- Energy efficiency
- Encourage recycling
- Improve health and wellbeing of staff / local community

Response:

7 Technology – Stop and Go

Liverpool City Council are part of the European Union Stop and Go programme which has a stated aim of providing “innovative solutions in eHealth, assisted living and for mobility”. This programme is providing funding for innovative technological solutions to improve the quality and cost effectiveness of the services.

During the first year of the contract the technology will be assessed to see if it delivers the expected benefits and cost effectiveness of your service. If it is assessed as delivering the improved service then the ongoing costs will be negotiated.

The assessment details of the technology involved will be developed with the commissioners within the first 12 weeks of the contract to ensure monitoring is complete.

If you are proposing more than one technological solution, please provide a separate response under the headings below for each. You may use the word count for each (i.e. 2 proposals – 500 word for each).

7.1 Please provide a brief description of the technology

Response:

7.2 Please provide details of what benefits the proposed technology will bring to Service Users, the Council and your service in relation to:
- improved outcomes
- cost effectiveness
- service quality
- service user satisfaction

Response:

7.3 Please outline the costs of the technology which you would require the Council to fund during the first 12 months of the contract. Your response should set out all costs associated with acquiring, implementing and operating the technology.

Response:
Response:

<table>
<thead>
<tr>
<th>8</th>
<th>Electronic Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1</td>
<td>It is a condition of for these services that Providers operate in Electronic Monitoring System which meets the requirements of the Authority as set out in the Service Specification. Please provide details of the electronic monitoring system you currently have in place (or will acquire prior to the commencement of services) and confirm that it does (or will) meet the Authority’s requirement.</td>
</tr>
</tbody>
</table>

Response:

7.1.4 **Payment approach**

The payment is a fee for the service delivered. The hourly rate paid for care is set formally with a consultation process with the providers. The providers enter through an electronic portal the actual hours delivered manually into the Authorities finance system. The agreed technology costs are paid by invoice and we hope with the extra funding to now get the actual care costs digitally to be inputted into the finance system.

7.2 **Sant Pau**

The new comprehensive service in Sant Pau for defibrillation and re-synchronisation with cardiac implanted devices aims to sort out the whole process of purchase, implantation, remote monitoring and complications management within the hospital’s arrhythmias unit.

The shift from a device-purchasing to a service-purchasing scheme enables a set of services (triage in remote monitoring, multi-brand platform to monitor implanted devices’ activity, technical support, among others).

The object of the contract will be a comprehensive service that necessarily includes:

- Material provision and management;
- Technical assistance in the care procedure of patients;
- Management of incidences and complications related to the AICD;
- Home monitoring services;
- Change management including training for professionals (nursing staff and doctors), patients and relatives;
- ICT solution as support to monitor patient in hospital settings and remotely.

7.2.1 **Awarding Criteria**

The awarding criteria belong to two categories:

- **Administrative documentation: automatic evaluation**
- **Value judgement items**: 105 points.

The Value judgement items include:

**B1. Assessment of the Operational plan (max score: 65 points). Mandatory items in the operational plan:**
• Supply operational plan.
• Detailed activity management plan.
• Technical assistance operational plan.
• Home monitoring plan.
• Development plan for Remote Control and Support Centre: Operational plan for protocols setting.

The following table summarises the scoring for each awarding criterion.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Operational plan proposal</th>
<th>Viability of the proposal</th>
<th>Level of innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply operational plan</td>
<td>Max. score: 10</td>
<td>Low viability (0-10 points)</td>
<td>Low-innovative (0-10 points)</td>
</tr>
<tr>
<td>Detailed activity management plan</td>
<td>Max. score: 5</td>
<td>Moderated viability (11-29 points)</td>
<td>Moderated innovation (11 to 25 points)</td>
</tr>
<tr>
<td>Technical assistance operational plan</td>
<td>Max. score: 15</td>
<td>High viability (30 points)</td>
<td>High-innovation (26 to 35 points)</td>
</tr>
<tr>
<td>Home monitoring plan</td>
<td>Max. score: 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development plan for Remote Control and Support Centre: Operational plan for protocols setting.</td>
<td>Max. score: 25</td>
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</tbody>
</table>

The awarding criteria to allocate the score are as follows:

**Operational plan:**

Supply operational plan: The implantation process, extraction process, supplies management, technological renewal, and new technologies uptake.

Detailed activity management plan: user-friendliness of the management tool provided and the level of integration and the cost-saving solutions for the hospital.

Technical assistance operational plan: staff allocated at the hospital, personnel-replacement staff.

Home monitoring plan. The following items will be assessed: performance of the remote control, the call centre for patients and clinicians, implantation plan for the information system, elicitation of the existing information at arrhythmias unit, information system-change management.

Development plan for Remote Control and Support Centre: Operational plan for protocols setting including the flowcharts describing the transmissions classifications, the transmissions verification process.

**Offer viability:**

The offer is assessed against: Soundness of the offer; adaptability to the centre needs, sufficient and appropriate resources allocation (human resources, technology). Low viability is defined as a score range 0-10, medium viability is 11 to 29 and high viability is a score of 30. No offer is accepted below 20 points on this item.
Level of Innovation
The innovation of those offers above the 20-points threshold will be assessed against the following scores and criteria:
A low-innovative proposal includes a service management system, a supplies and stock management that already exist in the marked and tailored to the end of the service.
A moderate innovation proposal would include existing technologies not used for the service purpose so far. These innovations do not need any R+D activity.
A high-innovation proposal would develop a product for the service purpose through R+D activities.

B2. Improvements on the hospital personnel. The hospital needs to allocate human resources to the extraction procedures. The service provider assumes part of the risk of complications thus will also assume a certain percentage of contribution to the staff costs needed for extracting devices.

7.2.2 Payment approach
The service is paid month by month. The estimation for the payment is the following:

- On Month 1 after the contract signature = T x 0,10
- From Month 2 to Month 11 after the contract signature = T x 0,87
- On Month 12 after the contract signature = T x 0,03 (or the percentage (up to 3%) of achievement of the quality objectives).

where T = the contract amount.

Outcomes-based payments:
The 3% of the total amount of the year payment is regulated by the following rules:

<table>
<thead>
<tr>
<th>Index of objectives achievement</th>
<th>Percentage of annual amount paid to the winning bidder.</th>
</tr>
</thead>
<tbody>
<tr>
<td>99 o 100%</td>
<td>3%</td>
</tr>
<tr>
<td>85 to 98%</td>
<td>1,5%</td>
</tr>
<tr>
<td>Less than 85%</td>
<td>0</td>
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</table>

The outcomes indicators are the following:

a) Quality indicators of the Remote Control Support centre
   % of patients not accepting the remote control under 5%
   < 5% Red alerts
   < 10 % unscheduled transmissions
   < 20 % transmissions producing in-hospital visits
   5% of decrease of the hospital visits
b) **Consistency between the RCSC and the transmissions classifications within the hospital.**
   
   - <10% of inconsistency in Red or Orange transmissions
   - <10% of inconsistency in Green transmissions

c) **Patient satisfaction**
   
   10% of improvement in a satisfaction survey during the contract execution.

d) **Moves to hospital:**
   
   10% reduction of the in-hospital visits patient/year during the contract execution.

e) **Reduction of inappropriate pulses**
   
   Reduction by a 10% of inappropriate pulses patient/year during the contract execution.

f) **Identification of those patients that may require care/intervention: scheduling optimisation.**
   
   - >80% of consistency between schedule and alerts according to the clinical guidelines and the reality.
   - <20% of patients with re-synchronisation and bi-ventricular stimulation <90%
     Detection >80% of patients with stimulation of the right ventricle
   - >40% in patients with unicameral or bicameral AICD.
   - Detection >80% of patients with new auricular fibrillation within a month
   - Detection >80% of patients with out-of the range scoring of ventricular threshold in less than a month.
   - Detection >80% of patients with threshold values or auricular detection out-of the range in less than a month.

g) **Implantation quality criteria:**
   
   VI electrode implantation rate: left electrode implantation rate >90%
   Infections: Infections rate in operation theatre during implantation <3%
8 Evaluation plan

In the subsequent versions of this deliverable this section will describe the activities agreed to be performed locally by each procurer and the ones that require a collaborative approach by the project’s partners, with the suitable timescale and milestones.

In principle, each locality will perform its assessment according to common principles and coherent tools, with appropriate adaptations to the local contexts and the topic of the actual tenders involved, taking into account the principle expressed in § 5.2:

The effort of WP6 of SaG involves the calculation of a number of indicators; however the main purpose of the evaluation is not consisting on the demonstration of the efficacy of the services, but rather on the usability of those indicators by the managers to improve the care delivery. Therefore the reports produced by the partners will need to describe the experience of the professionals and the managers with the indicators, more that presenting tables with the values of the indicators.

Each procurer (inside or outside the project) who uses the EST and the related material should ideally provide a report to the Consortium, to describe its experience:

- Just after the signature of the contract, the procurers should describe
  - which parts of the EST were most useful,
  - how they customized the procurement process and the template for the tender,
  - the peculiarities of the bids received, the degree of innovation
  - the solutions that were proposed by the bidders (innovative care models, expected improvements in the health services, packages of technological components, interoperability solutions) – in particular about the one that was selected
  - the proposed indicators and the agreed ones stated in the contract

- by the end either of SaG or of their contract, the lessons learned about their experience, what was working well and what failed

Most of the data for the indicators should be extracted automatically from the routine data, even if a procurer could develop ad hoc questionnaires for particular purposes. Appropriate requirements in the tenders will assure that the necessary data will be generated as a part of the health services provision.

The reports produced by each locality will be collected and compared by the Consortium, in order to extract the lessons learned and to improve the various steps of the involved processes, A discussion among the partners will extract the common features and will assist in the revision of the project’s material, including the training material.

Aggregation of anonymized data for benchmarking purpose should be considered if there is evidence of potential added value.
9 Conclusions

This deliverable is a work-in-progress and will remain as such until the end of the project. In fact, its aim is to provide the methodological framework to synchronize the different kinds of evaluations that will be carried out during the life of SaG, and the related instruments.

The details on the actual indicators and the detailed criteria used in the evaluations are in other deliverables, e.g. the two deliverables produced by WP2 (the Reference Business Case and the European Specification Template) or the various reports produced by the specific assessment activities in WP5.
10 References


The MAST methodology
www.renewinghealth.eu/projectoverview/ overview/assessmentmethod
www.mast-model.info

Scirocco Project, The Maturity Model of the Action Group B3


EU Project Momentum. All documents including all Blueprint versions are available at www.telemedicine-momentum.eu. For more information contact info@telemedicine-momentum.eu.
Annex. Description of WP6 (from the DOW)

Objectives
This WP is focused on the evaluation and quality assessment of the project development and project outcomes. The main objectives are:

- Evaluation of the achievement of project objectives (public procurement procedure, quality of services provided, experience in local implementation, quality of feedback from service users and service providers ...).
- Evaluation of agreed key indicators on the quality and impact of the project sites in terms of including quality of service provided, impact on health status of target population and informal carers, budgetary impacts and return on investment.
- Evaluation of the contribution of the project to the achievement of the EIP-AHA objectives.
- Contribution to the European Knowledge Base by extracting lessons learnt from the comparative analysis.

To develop this work it will be necessary first to define the evaluation methodology and secondly to apply it. The results of this work package should be useful for adoption and refinement of innovative procurement procedure, decisions making on extension or adoption of services and cross-learning.

Dependencies: It starts in M1 to monitor the activities on the indicators in WP2. The main operational phase follows the signature of contracts in WP5. It influences the exploitation in WP7 and the dissemination in WP8.

Description of work and role of partners

Task 6.1 - Development of an evaluation framework for STOPandGO.
During this task the specific elements to be evaluated will be identified as the time that the scope of the tendering process is being determined in earlier work packages. This will help determine a range of generic outcome measures for all countries, as well as potentially some country specific outcomes depending on how the scope of tenders may differ. These outcomes will both inform the ongoing implementation of innovation but also can be used in terms of judging the performance of service providers in line with any stipulations set out in contracts for service provision.

This information can also be used by service providers to improve the quality of services providers, e.g. drawing on feedback and experience from end users.

When possible, existing methodologies already in use in Europe will be adopted (as MAST or FIM, for example). The contribution to the EIP-AHA will be evaluated using the framework currently under development by IPTS, if available. Complete plan of evaluation including indicators, evaluation procedure and adequate timescale for collection of data will be developed. The collection of necessary data from pilot sites will be included as part of tender requirements and subsequent contracts with procurers.

Task 6.2 - Actual services deployment and continuous evaluation.
The providers will deploy their services and each local procurer will monitor the steps in the advancement of the contract in its locality, reporting continuously to the Executive Board about quality control and evaluation of the service provision.

Evaluation will be performed by collecting data and applying the adopted methodology to get the full set of indicators, described in previous task.

Task 6.3 - Analysis of results.
The obtained results will be analysed, when necessary further inquiries will be made to identify the reasons behind unexpected results.

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<tr>
<th>Task</th>
<th>Description</th>
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<tbody>
<tr>
<td>D6.1</td>
<td>Evaluation framework for STOPandGO and related handbook for its application (M8)</td>
</tr>
<tr>
<td>D6.2</td>
<td>Evaluation results (M36)</td>
</tr>
<tr>
<td>D6.3</td>
<td>Analysis of results, lessons learnt about the evaluation processes (M36)</td>
</tr>
</tbody>
</table>