



# Mid-term evaluation report in tele-consultation implementation including necessary adjustments

Output No. 4.3

Produced by WP4 members



Part-financed by the European Union  
(European Regional Development Fund  
and European Neighbourhood and  
Partnership Instrument)



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Mid-term evaluation report in tele-consultation implementation including necessary adjustments

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WP no.: 4

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WP title: Implementation of tele-consultation for improved professional cooperation and quality in remote primary health care

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Date: 2013-11-09



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## 3. List of Abbreviations

BSR	Baltic Sea Region
EUR	Euro
GP	General practitioner
PHC	Primary health care
PHCW	Primary health care worker
TC	Tele-consultation
WP	Work-package



## 4. Abstract

The Baltic Sea Region (BSR) is confronted with an ageing population, which leads to a rising demand for primary health care (PHC) services. Moreover an increasing lack of health workers and medical doctors challenges the maintenance of PHC within the BSR. Above all the brain drain of health professionals is affecting particularly remote areas in the whole BSR. There is evidence that professional isolation is a leading cause for this brain drain.

The overall aim of PrimCareIT is to raise the attractiveness of remote primary health care for medical professionals by the means of tele-consultation and tele-mentoring. Thereby the project counteracts brain drain and professional isolation in sparsely populated areas for more equal access to primary health care in the BSR.

A better deployment of tele-consultation and tele-mentoring including social media has strong potential to reduce professional isolation and to provide opportunities for professional networking, continuing medical education and career development for younger and experienced doctors and health workers in remote areas.

Building on the Task 4.3: “Mid-term evaluation of the pilot projects” the report is concentrating solely on the status of the pilots and eventual deviations and directional corrections to ensure that pilots arrive timely regarding outcome and achievements.

The report contains introduction to the work package, context descriptions of the on-going 7 pilots together with mitigation opportunities for future.



## 5. Introduction to PrimCareIT

*Note: To frame the deliverable, a short introduction to the project context follows. More details to be found in Output 4.2.*

The increasing lack of medical professionals, such as health workers and medical doctors, challenges the maintenance of primary health care (PHC) in all Baltic Sea regions. Demographic change and ageing population lead to a rising demand for PHC services with a higher morbidity and more chronic diseases.

In addition the brain drain of health professionals is affecting particularly remote areas in the BSR challenging the maintenance of rural primary care. There is evidence that professional isolation is a leading cause for brain drain among other factors such as remuneration and living conditions (UN, WHO). Such brain drain of health professionals is currently affecting remote primary care in the whole BSR.

A better deployment of tele-consultation and tele-mentoring between health professionals within the primary care and with relevant hospital specialist can reduce professional isolation, provide opportunities for professional networking and continuing education thereby attracting more medical professionals to remote areas (UN).

PrimCareIT is in part a continuation of the flagship project ImPrim. While ImPrim mainly focuses on financial incentives to attract health professionals to the PHC, PrimCareIT complements this approach by elaborating on opportunities of tele-consultation and tele-mentoring.

The overall aim of PrimCareIT is to raise the attractiveness of remote primary health care for medical professionals by the means of tele-consultation and tele-mentoring. Thereby the project counteracts brain drain and professional isolation in sparsely populated areas for more equal access to primary health care in the Baltic Sea Region.

The PrimCareIT objectives are

- To assess the regional needs and strategic opportunities of tele-consultation and tele-mentoring to avoid professional isolation of health professionals in remote primary care
- To assess current barriers for large scale deployment of tele-consultations and tele-mentoring in the BSR such as technology acceptance, investment decisions, work flows, legal uncertainties
- To implement and validate transnationally developed tele-consultation solutions in remote primary care in pilot sites
- To implement tele-mentoring as innovative solution for career development of younger health professionals in remote primary care
- To prepare the durability and large scale implementation of the piloted solutions in the partner regions

## 6.1 WP4 context and background

The project PrimCareIT is structured in work-packages. The WP4 will explore how to overcome professional isolation in the primary health care (PHC) sector in remote areas. This will be achieved by elaborating, implementing and testing methods and tools that support tele-consultation.

The aims of the WP members are:

- To implement successfully methods and tools for tele-consultation in 7 pilot sites in remote areas of 5 different countries within the Baltic Sea Region.
- To validate the transnationally developed tele-consultation solutions in remote primary care in pilot sites.
- To prepare the durability and large scale implementation of the piloted solutions in the partner regions.

Sub-objectives are:

- To enhance the connection of health professionals within primary health care and the cooperation with the secondary health care sector.
- To enhance the use of ICT for collaboration of health professionals within primary health care and the cooperation with the secondary health care sector
- To improve the professional cooperation and quality in remote primary care.
- To counteract professional isolation through tele-consultation.

### Introduction to WP4 tele-consultation baseline

Tele-consultation accounts for a substantial part of tele-medicine. It can be generally defined as a (audio-) visual communication link between health professionals. Tele-consultation enables the virtual communication between doctors of different disciplines or with specialists in other health care institutions like hospitals.

As more and more other health professionals in PHC (for example specialized nurses and physiotherapists) have their own consultations and the request for inter-professional collaboration, there is a need for technical and methodological support for communication and consultations between all health professionals in PHC

Tele-consultation is carried out in different ways. There are two broad categories: live tele-consultations via video- and audio recordings and data tele-consultations. Video- and audio recordings can be uni- or bi-directional, in real-time or not. The information can be transmitted via e-mails, the World Wide Web and through other Internet applications. Data tele-consultations involve the information regarding the patient's medical condition, for example laboratory findings, which is forwarded to a consulting physician for second opinion.

The use of social media has increased rapidly in healthcare during the last decade.

Physicians, patients, and healthcare organisations are all starting to employ a new generation of online and mobile technologies, which are fundamentally changing the way healthcare works. Social media, for example, can be used by healthcare providers to give general advice, provide information, and to facilitate interaction between patients and physicians or nurses. Social media also represent an untapped means for social networking among medical professionals. For example, social networks can be used to reduce the isolation of remote primary care physicians or to improve the means for addressing support to tele-consultation is also considered in the



demonstration scenario as a possible component

Especially in remote areas tele-consultation can take place between health workers and general practitioners (GPs) as well as between GPs and medical specialists at hospitals. During a home visit by a health care worker, for example, the patient information on vital signs, pictures of ulcers or recordings of the patient's behaviour after suffering a stroke can be send via mobile phone directly to the GP, who can give further instructions to the health care worker. Thus, the patient does not have to travel to the GP. According to this example, tele-consultations will also facilitate the shift of medical tasks from hospitals to GPs and from GPs to health workers. Consequently, specialists are taken to the primary health care sector by tele-consulting. Therefore, tele-consultations ensure continuous care. Moreover, hospital visits will be reduced.

Technologies for tele-consultation are available off-the-shelf. However, there are several obstacles and problems that prevent the implementation and routine use of tele-consultation. A survey of the project participating Baltic Sea countries on challenges for implementation of tele-consultation in remote primary care showed that a reserved attitude of health workers and GPs towards eHealth and tele-consultation inhibit its use. Until now, tele-consultations are not part of daily working routines of GPs and health workers. There are no processes implemented, on which level a tele-consultation should take place. Furthermore, a missing reimbursement scheme of tele-consultation between institutions of primary and secondary health care makes an implementation and use of tele-consultation difficult.

For tele-consultation the national frameworks concerning the health care system, existing connections between health care provides as well as data protection and legal security have to be taken into account. Legal uncertainties regarding tele-consultations and documentation of health data should be clarified. The applications should be feasible and manageable. Still, tele-consultation is proven to be one instrument to counteract professional isolation of GPs. It allows them to directly communicate with a colleague to discuss clinical pictures, diagnosis and treatment of their patients. Therefore, tele-consultation is also a tool for continuing education.

Furthermore, tele-consultation leads to better cost-effectiveness, cost savings, access to specialised medical knowledge and to more attractive jobs for medical professionals in remote area

PrimCareIT addresses the aforementioned problems and will solve them in consideration of the national and regional distinctions. Seven pilot sites in five different countries within the Baltic Sea Region – Finland, Sweden, Lithuania, Estonia, and Republic of Belarus – will elaborate, implement and test tele-consultation within this project.

In most of the participating pilot regions, a secure environment for eHealth applications in primary health care is already established. In Estonia, for example, tele-consultation should be made through secure environment of the electronic health record (EHR) system. But even though the infrastructure is at hand, eHealth for consultation has not yet been introduced in remote primary care. All implementing project partners are facing resistance in the use of eHealth applications such as tele-consultations. These obstacles and barriers should be overcome by PrimCareIT.

The use of tele-consultation in remote areas is a new promising field of improving primary health care. The tele-consultations should take place both within regions and across borders to meet the



transnational aspect. Regarding WP4 of the flagship project ImPrim, which develops measures to enhance and harmonize professional development in primary health care, this work package should establish tele-consultation as the aforementioned tool for continuing education in remote primary care and improve the cooperation between health professionals within the primary health care sector, for example between nurse and GP, as well as with the secondary health care sector.

A transnational workshop after the end of the pilots will evaluate its results. The findings will be taken into account in WP 6. A handbook with good practices and guidelines for the successful implementation and usage of tele-consultation will be published.

## 6. Methods

The main influence for designing the individual pilot studies in this work has been case studies [i], which provided a useful baseline because the area of concern has been in a contemporary live healthcare process that cannot be lifted out of its context and where the events cannot be controlled [i]. Yin [i, p.13] states that a case study is “*an empirical study that investigates a contemporary phenomenon within its real-life context*”. A case study approach is applicable, especially when the boundaries between the phenomenon being studied and its context are unclear. This matches the reality in the pilot cases with their rather uncontrolled interactions. For instance, it is difficult to replicate a healthcare-to-healthcare consultation without the access to the actual situation including possible stress or impact of patient presence, making it hard to mimic or replicate the consultation. Further, because the project is about understanding “how” the practical tele-consultation can be supported, and carried out, the case study approach is also appropriate.

The members of WP4 have been asked to use templates for pilot descriptions for each pilot (PrimCareIT-WP4-PilotX-Name.docx), in order to collect data to plan and carry out the studies.



## 7. Pilots

### 7.1. Planned pilots

There are seven pilots planned within the WP4 activities:

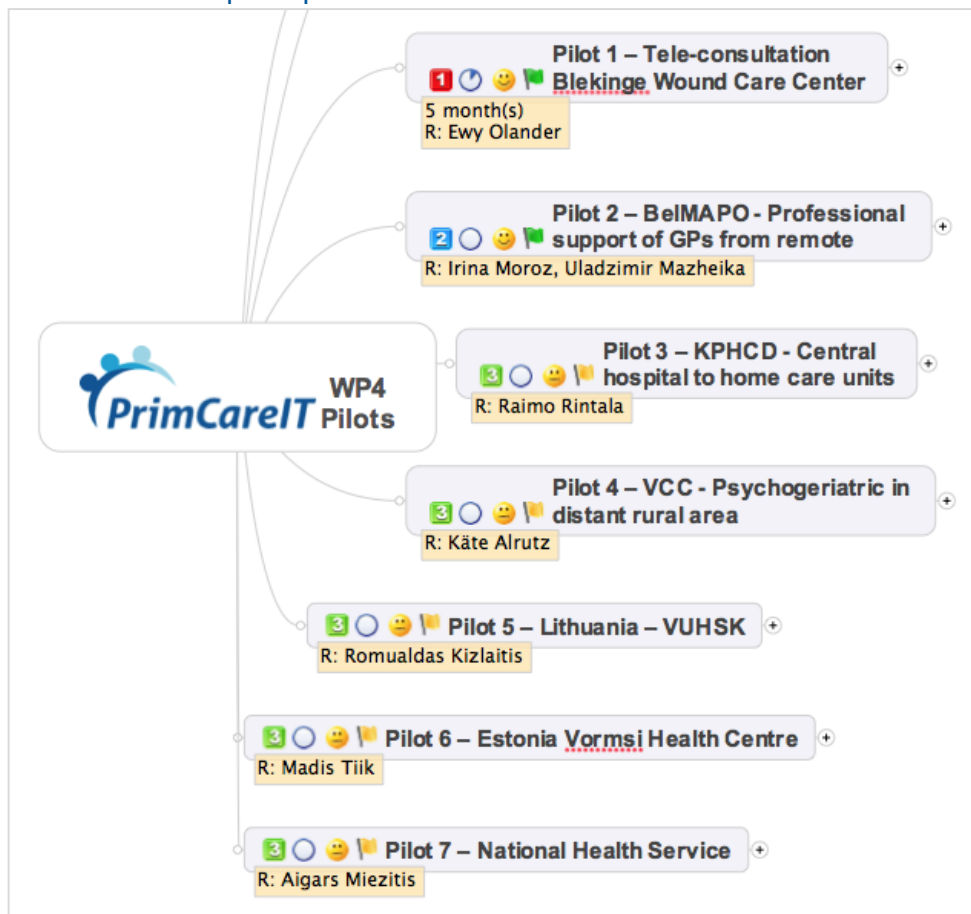


Figure 1. WP4 pilots (Source: Riga PrimCareIT WP4 meeting documentation).

- Pilot 1: Tele-consultation Blekinge Wound Care Centre
- Pilot 2: BelMAPO – Professional support of GPs from remote areas
- Pilot 3: KPHCD – Central hospital to home care units
- Pilot 4: VCC – Psychogeriatric in distant rural area
- Pilot 5: VUHSK – Remote General Practitioner
- Pilot 6: Estonia Vormsi Primary Health Care Centre – GP support
- Pilot 7: NHS – Supporting GPs from remote areas

The pilots are described in full in Output 4.2.

## 7.2. Pilot deployment scheme

As seen in Figure 2 the deployments of all pilots are underway and all pilots are started as of Jan 1 2013. There are mid-term evaluations according to WP4 directions, and final documentation by end 2013.

Pilot	2012	2012	2012	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
#1						Eval 1									Final
#2								Eval 1							Final
#3							Eval 1								Final
#4						Eval 1									Final
#5								Eval 1							Final
#6									Eval 1						Final
#7							Eval 1								Final

Figure 2. Deployment plan of pilots #1-7

## 7.3. Evaluation of pilots

Indicator related evaluation common for all pilot sites.

### Pilot projects in WP 4 pilot projects

Formative, process- and outcome evaluation

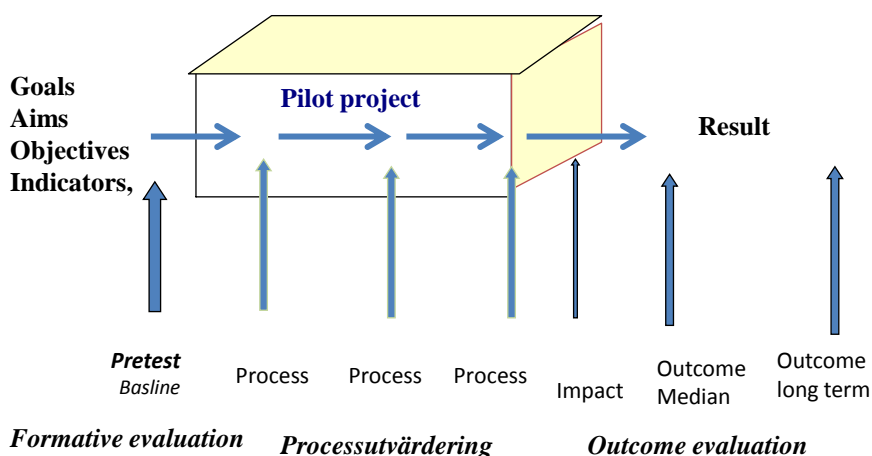


Figure 3. Evaluation process

### 7.3.1. Formative evaluation

#### Pre-test Baseline Data collection before pilot;

- Monitoring of present consultations; time duration, type, location etc.
- Observations with field notes of the settings for consultation at the pilot site (consultation rooms, equipment, localities, placement of working desk with computer, bench and chairs for the patients, etc. )
- Interviews with involved expert and PHC workers regarding work, IT-knowledge, attitudes, skills, and expectations.

### 7.3.2. Process evaluation

#### Data collection during the pilot after each consultation

- Follow up questionnaire filled in by involved PHCW; communication, accessibility usability, technique influences on the consultation quality, advantages, disadvantages, obstacles.
- Video observations of consultation with present patient, use of equipment, communication

#### Data collection after the pilot

- Follow up with questionnaire/interview with participated health personnel tele-consultation could be replicated, disseminated, sustainable

### 7.3.3. Results Impact and outcome evaluation

#### Data collection after the pilot period

- Follow up questionnaire/ interviews with involved PHCW (and other involved actors).
- Knowledge – regarding pilot specific contents (assessment and treatment, skills, use of technology, self-confidence, empowerment)
- Attitudes towards use of technology for consultation
- Number of pilot consultations, types, duration
- Benefits of tele-consultation versus traditional consultation (security in care and treatment, empowerment, time, knowledge, partnership)
- Benefits tele-consultation versus traditional consultation for patients (expressed by health personnel)
- Benefits tele-consultation versus traditional consultation for the healthcare (expressed by health personnel, obstacles and limitations)
- Suggestions for further development of tele-consultation

#### Data collection after one year

Questionnaire/ interviews. Long term outcome; follow up maintenance, replication, and dissemination.

### 7.3.4. Template for documentation of tele-consultation

Below is a translation of example from Pilot 1 documentation at every consultation. Also see on portal (PrimCareIT-WP4-Template-ConsultationDocumentation.docx).



**PrimCareIT WP 4 Pilot Wound Center Version 2 121028**

**NOTE: Translation from Swedish document!**

**Documentation of tele-consultations**

**To be filled out by wound center and consulting wound care personell**

En form **for every** consultation (paper version or digital, Ewy olander will collect)

Date						
Name						
<b>Type of consultation</b>  <i>Mark:</i>	<b>Type 1</b> Tele-consultation between Wound Centre (WC) Expert wound-nurse assistant and Primary Health Care Centre (PHC) Ronneby VC wound-nurse assistant".	<b>Type 2</b> Tele-consultation between WC Expert wound-nurse assistant and PHC Ronneby VC wound-nurse assistant, and PHC Kallinge VC wound nurse as a listener and learner (collegial tutoring)	<b>Type 3</b> Tele-consultation between WC Expert Wound –nurse assistant and PHC Ronneby VC wound-nurse assistant and district nurses at Ronneby and Kallinge VC as learners for wound assessment in collaborative learning	<b>Type 4</b> Tele-consultation between WC Expert assistant and PHC Ronneby VC wound-nurse assistant, and a patient with a wound for consultation by the Ronneby VC wound-nurse assistant.	<b>Type 5</b> Tele-consultation between WC Expert Wound – nurse and a Home care nurse visiting a patient with a wound in the patient’s home.	
<b>Who participated</b> <i>Note participants</i>						
<b>Technical equipment used:</b> <i>Note equip.</i>						
<b>Type of consultation</b> <i>Select</i>	Reception	Home visit	1st contact	Follow up	Planned	Unplanned
<b>Time used for staff</b> <i>Note time</i>						
<b>Time experienced by patient</b> <i>Note time</i>						

<b>Comments</b>	
<b>Answer the following questions as detailed as possible using your own words.</b>	
<b>Q 1 A</b> <b>How did the technology work?</b>  <b>Good – in what way?</b> <b>Less good – Why?</b> <b>What to improve?</b> <b>Suggestions for change?</b>	
<b>Q 1 B</b> <b>Usability of technology for this type of tele-consultation?</b>	
<b>Q 2</b> <b>How did we-camera work?</b>  <b>Good – in what way?</b> <b>Less good – Why?</b> <b>What to improve?</b> <b>Suggestions for change?</b>	
<b>Q 3</b> <b>How did the communication/consultation work/go?</b>  <b>Good – in what way?</b> <b>Less good – Why?</b> <b>What to improve?</b> <b>Suggestions for change?</b>	
<b>Q 4</b> <b>Factors that ease/enable use of tele-consultation?</b>	
<b>Q 5</b> <b>Factors that hinder/complicate the use of tele-consultation</b>	
<b>Q 6</b> <b>When patient takes part.</b>	

<b>How did the patient experience the consultation?</b>					
<b>Q 7 Total assessment?</b>	<b>100 % Perfect</b>	<b>75 % Good</b>	<b>50 % Neutral</b>	<b>25% Less good</b>	<b>0% Failure</b>
<b>Reason? Comment on Q 7?</b>					

Figure 4. Example of pilot report for consultation.

## 8. Status and evaluation of pilots

Following the intentional plan for evaluation pilots have responded using a decided predefined format regarding evaluation.

### 8.1. Pilot 1: Blekinge Wound Centre and primary care actors (Municipality and County Councils)

#### Blekinge Institute of Technology

##### Purpose and objectives

The purpose with the pilot project is to explore /find out/test best arrangements, structures, equipment, etc. for Wound centres tele- support and consultations that also could support collaborative learning, improve professionals' competence and counteract professional isolation and brain drain.

The objectives are to find out

- How the tested technical equipment support tele-consultation with sharing photos, recording consultations and several participants involved.
- The technical equipment's usability.
- The possibilities for tele-consultation using mobile connections (3G) in rural areas
- Tele-consultation impact on participating health personnel knowledge, understanding and skills for high quality of professional and secure investigation, treatment and caring.
- Which changes there are need for at the Wound Centres and the health care units to implement tele-consultation.

##### Timeline

The pilot started in September 2012. The first plan was to finalise June 2013, but the pilot tests need more time. The end of pilot is now scheduled for November 2013.



## Technology

- Lync Attende 2010 video conferencing system (this system was chosen because it is the system that the county council of Blekinge is using) with share of wound photos, record of consultations, and group communication.
- Other forms for collaborative learning based on ICT and web 2.0 applications for professionals with discussion forum for synchronic and asynchronic communication.
- Web based documentation.
- Use of 3G for mobile connections for tele-consultations in rural areas.

## Purchase of technical equipment

- Web cameras and extension cords are purchased.
- Tablets and smartphones are purchased.
- Wi-Fi and mobile roaming access provided via 3G networks and local LAN, purchased on monthly subscriptions.

## Status

Wound experts (GP and nurses/nurse assistants) at Lyckeby Wound Centre and Wound nurses/nurse assistants at three Primary Health Care centres in the east of Blekinge are testing the Lync video communication system for tele-consultation. From September 2013 also the other Wound Centre (Karlshamn Wound Centre) and nurses/nurse assistants at two PHC's in west Blekinge will be testing tele-consultation.

Planned tele-consultation between home care and elderly care (municipality responsibility) and Wound centre is still not tested. There have been problems with the Lync communication between the county council and the municipalities due to poor ICT communications (firewalls, different systems, etc.) and organisational changes in elderly care with lack of time for projects. New contacts with the municipalities with request for participations is ongoing.

Different types of Lync video-communication for tele-consultation between experts at Wound centre and PHC nurses /nurse assistants are tested.

- **Type A** – tele-consultation (dialogue), 12 consultations
- **Type B** – tele-consultation based on a photo of the actual wound taken by the Wound nurses and placed on the desktop using the Lync function “Share”, 10 consultations
- **Type C** – tele-consultation during a patient consultation at the PHC, 8 consultations.
- **Type D** – tele-consultation with another wound nurse as a listener and learner (collegial tutoring), 2 consultations.
- **Type D – recorded** – tele-consultation with individual designed wound care and treatment education, 0 consultations.

These tests have been carried out with ordinary computers and fixed network. Tests of consultations via mobile network in rural areas and via Ipad's with 3G are ongoing.

## Experiences from carried out consultations/mentoring sessions.

- + Both Wound Centres and personnel in Primary Health Care Centres are positive to tele-consultation as a complementing method for consultations.
- + Lync video communication between Wound Centre and PHC Wound nurses/nurse sharing



photos of wounds in the consultations works well both in computers and tablets with wired network connections.

- Problems with the Mobile 3G Internet connection (Telenor) according to geographical places.

**Level of satisfaction so far staff/patients (or other stakeholder) if measured.**

+ All district nurses who have tested Lync for tele-consultation are satisfied with both the easy technique, good quality of communication and sharing photos.

+ The test persons believe that this kind of tele-consultations and mentoring/education could give a higher quality of consultation than ordinary telephone consultations and e-mail contacts, especially when they follow the healing process with photos. They also think it is a valuable complement to physical consultations at the Wound Centre.

+ Personnel in Wound Centres and Primary Health Care experience several benefits of telecommunication; faster and easier access to experts, increased quality in assessments of wounds, more secure treatment.

**Please describe any setbacks or hurdles you have experiences so far.**

- Collegial tutoring is only tested once with positive experiences. Lack of time for this type of tele-consultations in the organisations – probably no more tests.

- The Wound Centre wants to implement tele-consultation in ordinary work. They are aware necessity of changes in consultation planning and routines for contacts, documentation, etc. implementation. No changes have been done so far.

- The personnel are hard work loaded in slim organisations. There is short of time for “extras” as tests and meetings. Therefore the implementation of tests requires longer time than planned. The scheduled test period is extended to also include autumn 2013 to November 2013.

**Please describe any factors for success you have identified so far.**

Some of the PHC-nurses/nurse assistants are using the tele-consultation via Lync as an ordinary communication way for wound consultation.

**Documentation of consultations/mentoring sessions.**

All tests are documented and evaluated by the involved nurses.

**Actions for sustainability of your pilot project have been taken or do you plan to take?**

The Wound Centre personnel (nurses and doctor) have started to discussion and plan for team meetings for discussion of routines and organisational changes for implementation of tele-consultation in regular work,

**Transfer experiences from the pilot into the organisations involved?**

We have had meetings with primary health care managers. In June we had a dialogue seminar where we discussed implementation of tele-consultation in healthcare.

**Organisation of your pilot - staff, management etc.**

- One pilot leader
- One technical support
- Two nurse assistants - one at each Wound Centre,
- Nurses at two (after summer three) primary health care centres

## 8.2. Pilot 2: BelMAPO - Professional support of GPs from remote areas

The goal of the pilot is the professional support of PHC specialists in remote areas by means of information and communication technologies (tele-mentoring and tele-consultations),

- ✓ Professional support of 8 GPs and 70 doctors of OCRH (mentees) by BelMAPO specialists (mentors)
- ✓ Professional support of doctors from remote areas

### Project procedures and milestones WP4

Steps	Time line	Status
Learning program with amendments based on the testing results	(February 2013)	Finalised (using own technical recourses)
Tele-mentoring	(February 2013 – June 2013)	Finalised
Mid-term evaluation	(June 2013)	Finalised
Updated process of tele-mentoring	(June 2013 – October 2013)	In progress
Pilot analysis	(November 2013)	Not started.

Table 1. Milestones WP4 for pilot

### Technical aspect

At the moment the pilots are carried out with the help of the present (non-project) equipment of BelMAPO and Ostrovec CRH. Ostrovec CRH is purchasing of five tele-consultation systems. The procurement has been carried out.

### Numbers of tele-consultations and tele-mentoring sessions carried out:

WP4 Tele-consultations	26
WP5 Tele-mentoring	8 online 5 video-conferences (including 2 webinars)

Table 2. Numbers of consultations and sessions

### Experience gained while tele-consultations and tele-mentoring.

Implementation of the pilot proved the necessity of equipment and technologies improvement for successful tele-consultations and tele-mentoring

### Level of satisfaction

Evaluation Criteria	Pre-testing	Mid-term testing
<b>Satisfaction with technical aspects (%)</b> (How satisfied were you with the functionality of the used technology during the connection?)	50	73
<b>Satisfaction with content (%)</b> (How useful do you consider the content of the session was?)	70	75
Percent of the interested in tele-mentoring	100	100

Table 3. Statistics of satisfaction

- Obstacles
- Technical equipment
- Lack of experience in tele-mentoring/consultations.
- Absence of legal acts on distance learning, mentoring and tele-consultations in Belarus

### Factors of success

High level of motivation and interest of the participants in tele-mentoring and tele-consultations usage. (Percent of the interested in tele-mentoring/tele-consultations =100%).

### Advantages

- High motivation (mentors, mentees, politicians)
- Teaching programs
- Skilled staff

There was also stated the interest of stakeholders and politicians in using tele-consultations and tele-mentoring in Healthcare system.

Tele-consultation between the consultant of the BelMAPO and specialist of Ostrovec CRH (Ostrovec Central Regional Hospital and its 4 hospital-based outpatient clinics) and Ostrovec CRH as a consultant of its 4 outpatient clinics.

- Consultation and communication via video-conference system using computers with web camera.
- PHC specialist sends photo/medical data of a disputable case to the Ostrovec CRH or BelMAPO consultant or by e-mail.
- Documentation
  - to assess the quality of tele-consultation specialists fill in the questionnaire

### Tele-mentoring between BelMAPO and Ostrovec CRH doctors are carried out on/off-line, by e-mail; webinars.

- Consultation and communication via video-conference system using computers with web camera.

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Registration, filling in the questionnaire, testing the level of knowledge. Besides, the participants of webinars which are carried out in the framework of the approved by the Ministry of Health conferences are given certificates with the participation hours which are needed for further qualification verification.

**Planned activities**

- equipment purchasing
- continue cooperation with politicians and stakeholders
- 4 webinars based on the scientific and practical conferences, tele-consultations and tele-mentoring.
- Continuation of patients’ electronic data-base development.

**Experience exchange**

Participation in scientific and research conferences, where we share the information about the project and pilots.

**Pilot organisation**

Activity	BelMAPO	Ostrovec CRH
Management	Project manager – rector of the academy, functional manager, project coordinator, financial manager	Project manager, Project coordinator, functional manager, financial manager
Organisational support	Prorector for educational work, functional manager, project coordinator	Project manager, head of the department
Technical support	IT Department	Responsible for IT support
Tele-mentoring/ tele-consultations	Heads of the departments, academic teaching staff: GP department, clinical and laboratory diagnostics department Depending on the necessity additional members are available	8 GPs, 70 Ostrovec CRH doctors

Table 4: Pilot organisation

1. Pilots plan.

WP	Planned activity
tele-consultation	48 tele-consultations
Tele-mentoring	48 tele-sessions four web-seminars in the framework of 4 scientific and practical conferences

Table 5. Plan of pilot

2. Evaluation of financial benefit, costs and efficiency analyses

Financial analyses have not been planned.

3. Questionnaire results (preliminary)

22 specialists took part in the questionnaire. There were 6 GPs (27,3%) and 16 (72,7%) doctors of Ostrovec CRH, including 9 male (40,9%) and 13 (59,1%) female. The density of people of 31-40 years of age – 22,7% (5 of 22), 41-50 – 36,4% (8 of 22), 51 and older – 31,8% (7 of 22)

Experience	n=22
Less than a year from diploma	-
3-years from diploma	2 (9.1%)
6-years from diploma	-
10-years and more experience	20 (90.9%)

Tele-mentoring tech usage	Yes -	No
Experience in Instant Messaging?	10 (45.5%)	12 (54.5%)
Experience in discussion Boards?	7(31.8%)	15 (68.2%)
Experience in Webinars/ conferences?	4(18.2%)	18 (81.8%)
Experience in Moodle seminars?	3 (13.6%)	19 (86.4)

Technical situation	Yes -	No
Do you have access to the Internet?	14 (63.6%)	8 (36.4%)
Do you have a computer (private)?	17(77.3%)	5 (22.7%)
Do you have a computer (at your working place)?	10(45.5%)	12 (54.5%)

In this section, please rate the following questions	Never	once a month	2-3 times a month	once a week	every day	Yes
How often do you have the possibility to be mentored by an experienced colleague? (n=22)	4	2	1		10	5 (if needed)
How often do you have the possibility to be mentored by an experienced colleague? Using IT (n=22)	14				3	6
How often do you have the possibility to participate in educational lectures, classes (or such)? (n=22)	15	-	1	1	2	3

Table 6. Questionnaire preliminary results

### What are the obstacles for attending educational lectures, classes (or such)?

The main obstacles for participation in distant learning are the following:

- low technical infrastructure (13 of 22 respondents);
- lacking time due to the intensive work (8 of 22 respondents);
- low quality of telecommunication channels (4 of 22 respondents);
- lacking motivation of distant learning usage (2 of 22 respondents);
- remoteness (1 of 22 respondents);
- narrow specialization (1 of 22 respondents)

In this section, please rate the following statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
I feel self-confident when making decisions at work?		3	4	14	1
I have experience and knowhow for solving everyday cases?		1		19	2
I have experience and knowhow for solving rare conditions?		6	8	8	
I am willing to work in remote areas (e.g. in my current workplace)?			3	15	4
I feel professionally isolated?	2	8	6	4	2
I feel tele-mentoring can be used as a tool to support my professional development?			1	10	11
Use of tele-devices (such as iPads, PCs) in mentoring is suitable?			2	11	9
I like to use ICT-technology while communicating with my colleagues?			8	10	4

Table 7. Appendix 2: Pre- and post test

Rate questions on a scale of 1 to 5.	First session					Last session				
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The topic was interesting to me			3	19					20	2
The general goals of the session were fulfilled			3	19					20	2
I was able to achieve my own goals for this session			4	18				2	18	2
Overall I am satisfied with the functionality of used technology in this session		2	20						20	2
Overall I am satisfied with the functionality of used equipment in this session		2	20						20	2

Table 8. Appendix 3. Pilot session review.

### 8.3. Pilot 3: KPHCD - Central hospital to home care units

#### KPHCD

##### Purpose and objectives

The purpose of the project is to support Care Units and Home Care Units and health professionals through tele-consultation and change the working environment to be more attractive, improve professional competence, support collaborative learning and so counteract professional isolation and brain drain.

The aim is to support health personnel in their daily tasks and problem solving when taking care of chronic patients. By providing the staff possibility for tele-consultation we are improving the care standards in the units and at the same make doctors' work more manageable during the busy day. (They do not have time to visit the units during unscheduled hours.) We are able to introduce specific treatment pathways/guidelines and individual Health and Treatment plans according to the Chronic Care Model Terveyshyöty.

The purpose with the pilot project is to find out/test best arrangements, structures, equipment, etc. used in tele-consultation and tele-mentoring for our organisation and at the same support collaborative learning, improve professionals competence and counteract professional isolation and brain drain.

The objectives are to find out

- how the technical equipment support tele-consultation and tele-mentoring
- the technical equipment's usability,
- the possibilities for tele-consultation using Wi-Fi and mobile connections (3G) in rural areas
- is there any impact on participating health personnel knowledge, understanding and skills for high quality of professional and secure investigation, treatment and caring.
- changes needed at the health care units to implement tele-consultation and tele-mentoring.

### Timeline

The pilot started in September 2012. Procurement and to learn to use the equipment took more time than anticipated. First sessions of tele-consultation and tele-mentoring started in May 2013. Tele-mentoring pilots are finished, tele-consultation pilots continue up to the end of November 2013.

### Technology

- Videra-Polycom video conferencing system (this is used as it is the system that the counties in Finland are using). Common leasing procurement is done by the Association of Counties)
- PCs with camera and audio, laptop-computers, tablets.
- Use of 3G for mobile connections for tele-consultations in home care units via tablets

### Purchase of technical equipment

- Tele-Conferencing units are leased.
- Web cameras and audio extension are under purchasing
- Tablets are purchased after the approval and mobile roaming access provided via commercial 3G networks.
- Wi-Fi and local LAN partly installed.

### Status August, 30, 2013

#### **Tele-consultation:**

Using the existing equipment we have piloted consultations during May-July 2013 between doctors. Three consultation sessions has been done; one between nurses and doctors and two only between doctors.

We have done tele-consultations others than our designated pilots. During the period 1-6/2013 there has been several off-line GP-to specialist consultations; 84 Holter-recordings (24h-ECG-recordings), 49 Mediracer-investigations to diagnose sensoric medial nerve entrapment (carpal tunnel syndrome) and 34 night-polygrafies for the diagnosis of obstructive sleeping apnoea. On-line Radiology, and EKG consultations are daily routine using existing equipment and EPRs. Tele-consultations between Drs in different HCs and Drs to Specialists shall continue. These consultations are carried out with ordinary tele-conferencing units, computers and fixed network.

Consultations via mobile network via iPad's with 3G connection to Home Care Units is planned



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and will soon be tested.

**Experiences from carried out consultations/mentoring sessions.**

Acceptance was better for tele-mentoring than tele-consultation. General opinion is that tele-consultation gives a better possibility and access to consultations and improves the care standard. Tele-mentoring/e-education sessions are more accessible and allow more staff to participate.

**Level of satisfaction so far staff/patients (or other stakeholder) if measured.**

Questioners related to satisfaction are done, nor yet evaluated. All HCC with tele-conferencing units have a designated support person, who is in the position to help in case of problems occur. This equipment is easy to use but some beginner's problems existed.

**Please describe any setbacks or hurdles you have experiences so far.**

Pilot implementation has been delayed. Tele-consultation and Tele-mentoring are often twin-activities and some of the tele-mentoring sessions could as well be tele-consultations e.g. regarding treatment protocols and pathways. Current equipment is well suitable for tele-mentoring. We experienced that they were not well suitable for our pilot-consultations.

According to experiences in other PrimCareIT-pilots (Sweden) it was more practical to use iPads instead of lap-tops. However, we faced practical problems with the operating system. It is now solved, but we still have a problem with the PCs. Doctors PCs have a dictation capability and it interferes with the audio-visual equipment. Mainly it is only an unfriendly user problem, but since doctors knowingly avoid using that type of equipment, we have to solve it prior the pilot. For the same reason the 40 PC cameras w. audio equipment has not been purchased. The same with the iPads we need. We are able to run the mentioned pilots during the latter part of the year.

One obstacle has been IT-department's questioning of portable devices and their patient safety aspects. Cisco-Movi operating system is in compliance w safety regulations.

**Please describe any factors for success you have identified so far.**

Main savings were due to the travelling time ca. one day per session.

**Documentation of consultations/mentoring sessions.**

All tests are documented and under evaluation

**Actions for sustainability of your pilot project have been taken or do you plan to take?**

Off-line tele-consultations between GPs and Specialist shall continue as a regular activity. Discussion regarding the consultations to Home Care Units and Care Units need an evaluation session after the pilot ends. Some special support and motivation is expected to be in need. Only for the project purposes we created an extra structure.

Tele-mentoring was planned since the beginning so that it is done through our normal organisational channels each mentor being responsible for his or hers part. It shall continue as a regular activity.

**Transfer experiences from the pilot into the organisations involved?**

Health Board is informed about the pilots and they give approval and support for continuation. Staff managers need to have meetings with staff to enforce continuation and participation. Meetings with



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primary health care managers. We plan to have a seminar where the experiences are shared to the staff and politicians.

#### **Organisation of your pilot - staff, management etc.**

- Pilot Board
- One project manager
- One technical support
- Administrative and financial support as needed for the project documentation
- Mentors and Consultants as existing, not an extra staffing
- Participants-all benefiting staff

### **8.4. Pilot 4: VCC - Psychogeriatric in distant rural area**

#### **Västerbotten County Council**

##### **Aim of your pilot project, i.e. the benefit you hope to gain through the project or the problem you hope to solve.**

The overall aim is to increase knowledge on Cognitive decline and Dementia disorders among medical staff in rural areas of Västerbotten as well as counteract brain drain through implementing psycho geriatric tele-consultations.

The patient oriented aim is that patients with on-set of Cognitive Decline and Dementia Disorders in rural areas will have adequate diagnosis, medication and care taking.

The Geriatric Centre at Umeå University Hospital will provide Psychogeriatric specialist for tele-consultations with Healthcare Centres (HcC) in the communities of Malå and Sorsele.

##### **Goals of your pilot project, i.e. the project goals you have set up that are measurable.**

- At least one consultation session each month between Geriatrician and staff at the two HcCs.
- Increased amount of diagnosed patients in the two areas 2013 compared to 2012.
- Logging of staff present at each consultation
- Description of issues discussed
- 75% of staff are satisfied with the consultations
- PM for procedure and routines for tele-consultations within the Care program at The Geriatric Centre.
- At least one more site interested in implementing this working model



Part-financed by the European Union  
(European Regional Development Fund  
and European Neighbourhood and  
Partnership Instrument)



**Describe the pilot timeline and what the status for your project is and when you expect to finish.**

Start of Test period	Consultations	Midterm evaluation	Adjustments	Consultations	End of Pilot
Nov -Dec 2012	Jan. to June 2013	June 2013	Aug - Sept 2013	Oct - Dec 2013	Jan 2014
Visits to each site	Dates set at each site	According to template	Visits to each site		Visits to each site

Table 9. Timeline for pilot 4.

**Technical status, what technology did you purchase or do you plan to purchase and where are you on implementing these.**

Both HcC have VC rooms. Four iPads have been bought to be used by the doctor and the nurse at Geriatric Centre and by staff at the two local nursing homes, but the mobile network at the nursing homes are not strong enough to be used. We work with the community technicians to solve this. So far the Community nurses have gone to the HcC to take part in the consultations. We plan to by two computers to the VC rooms to have an easy access to patient records for the GPs. For administration purposes a portable computer and a cell phone is bought and used.

**Consultations or mentoring sessions carried out so far.**

10 consultations and about 30 patients discussed.  
Issues mostly about diagnostics but also about treatment and care.

**Experiences from carried out consultations/mentoring sessions.**

Huge need for consultations in the Psycho geriatric field  
Successful consultations are dependent on the District nurses engagement.  
VC rooms at HcC must be equipped with computers for easy access to patient records.  
More time needed for the specialists both doctor and nurse for managing the pilot and meet the needs of further implementation to at least one more site

**Level of satisfaction so far staff/patients (or other stakeholder) if measured**

Not measured but all staff very positive to this working model, they realise that many patients benefit from the consultations and they appreciate the knowledge they get.

**Please describe any setbacks or hurdles you have experiences so far**

Lack of GP can result in poorly prepared or cancelled consultations  
Technological problems at the nursing homes.

**Please describe any factors for success you have identified so far**

This working model fits within the County Council Business Plan for the Geriatric Centre and its mission to support the Primary care with specialist competence.  
Motivated staff especially local nurses and occupational therapists

**Others issues you would like to input**

Local multi professional teams responsible for the consultations and for following up on decisions might t be crucial for sustainability. Likewise interested specialists at the Geriatric Centre.

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**Describe how you have documented consultations/mentoring sessions.**

Specialist nurse is responsible for documenting the consultations; date and time, how many patients discussed and what issues, present staff and also technical issues.

**What actions for sustainability of your pilot project have been taken or do you plan to take?**

Tele-consultation is added to the Psycho-geriatric Healthcare Program of the Geriatric Centre.

**How do you transfer experiences from the pilot into the organisations involved?**

So far at staff meetings at Geriatric Centre and when the specialist nurse visits the HcC.

**Describe the organisation of your pilot -staff, management etc.**

Project staff consists of a project manager, a project administrator, the specialist doctor and nurse and the Head of the Geriatric Centre. Also a technician from our MT department can be called to take part of a meeting.

This group form the lead team and a common meeting is held and formally documented once a month. In-between there are meetings around special tasks or issues whit the necessary persons. For economic issues and budget follow ups the Project manager and the project administrator has support from the County's EU office and the controller at the Geriatric Centre.

## 8.5. Pilot 5: VUHSK – Remote General Practitioner

### VUHSK

**Aim of our pilot project – Basic information**

The purpose of the pilot is to setup tele-consultation environment in Vilnius University Hospital Santariskiu Klinikos (VUHSK) and 3 geographically remote primary healthcare centres (PHC): Anykščiai PHC (120 km from Vilnius), Druskininkai PHC (120 km from Vilnius) and Neringa PHC (350 km from Vilnius); and to test the possibility of improvement professional skills and reduce professional exclusion of those remote GPs using tele-mentoring and online tele-consultations. Pilot will include testing of live tele-consultations, sharing of patient medical data, including images, monitoring of some health functions. This would allow exploring and choosing the best available tele-monitoring and tele-consulting options in terms of software, hardware and human resource.

Experienced general practitioners (GPs) working in the Teaching Hospital - Family Medicine Centre of VUH Santariskiu Klinikos (mentors) and GPs as well as medical nurses in the smaller ambulatory GP clinics or PHC (mentees) will be enrolled in the pilot. The mobile IT hardware (e.g., tablet PC's, equipped with web camera, 3G and Wi-Fi modules) will be used on site in order to facilitate their medical expertise in case of rare medical conditions, need of second opinion or more specialized medical knowledge (e.g. consultation of secondary /tertiary level medical professional). The adaptive changes within hospital information system (HIS) of VUH Santariskiu Klinikos might also be implemented if necessary in order to allow remote access to patient data, data transfer and synchronous VOIP or Videoconferencing information exchange.



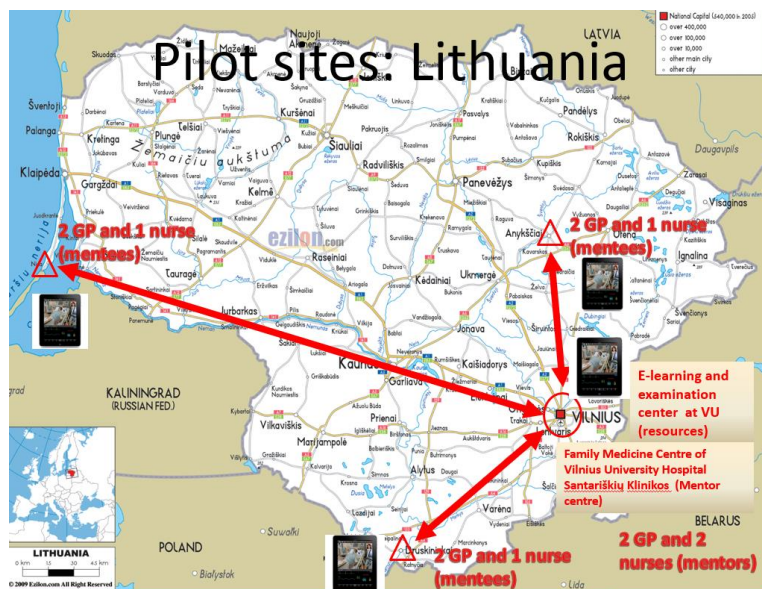


Figure 5. Pilot sites in Lithuania.

### Goals of our pilot project

By implementing pilot in 4 different locations of Lithuania, we aim to create prototype of professional network where mentees are motivated to improve where professional skills using tele-consultations in their routine work. One of the goals is to evaluate pilot equipment (both ICT and medical), suitable for spin-off of telemedicine and tele-mentoring.

### Description of the pilot timeline and the status of pilot project

- **December 2012 – May 2013:** After selection of pilot sites, intensive evaluation of possible telemedicine equipment and teleconferencing solutions was done. After debates between pilot sites physicians and university hospital specialist fields of telemedicine for the pilot where selected (cardiology, ophthalmology, dermatology). Some equipment was ordered for testing and the most suitable equipment was chosen.
- **June 2013** – preparation of the procurement documents
- **July 2013 – August 2013:** procurement procedures, delivery of the equipment and installation at pilot sites.
- **September 2013 – December 2013:** Start of tele-consultations, continuous adaptation of information system to follow the needs of both telemedicine consultations and tele-mentoring.

### Technical status, what technology we plan to implement



Part-financed by the European Union (European Regional Development Fund and European Neighbourhood and Partnership Instrument)



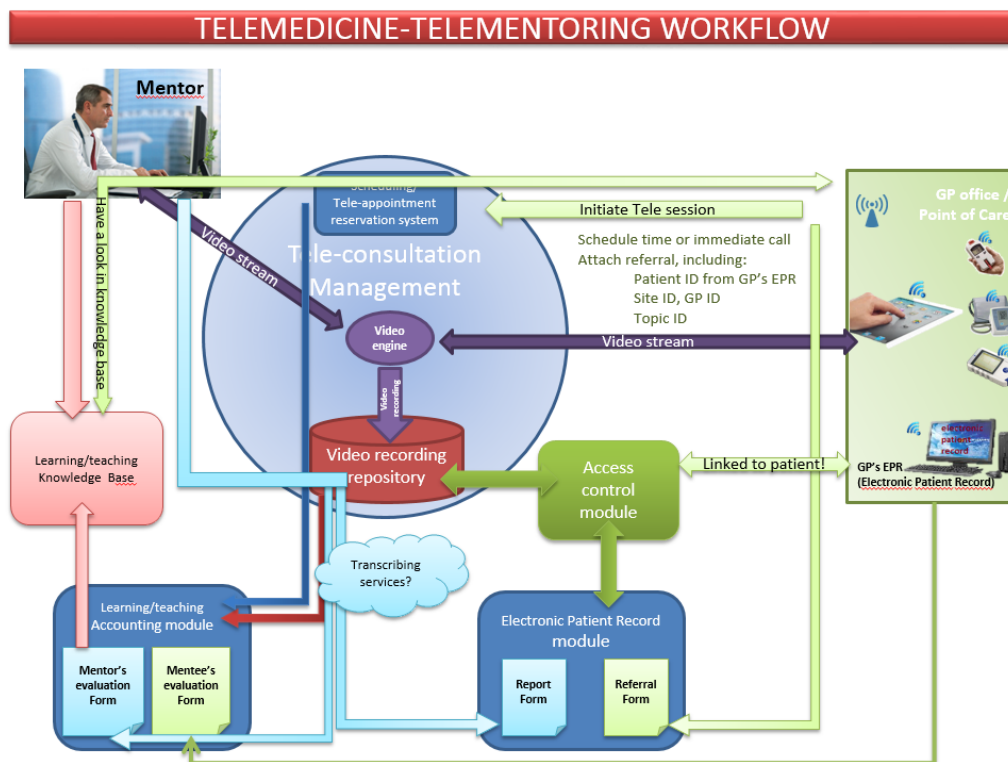


Figure 6. Pilot implementation workflow.

Available equipment, software for implementation of the pilot workflow was evaluated and possible equipment chosen, but in our procurement documents we leave possibility to offer alternative solutions. The main specification of the Server Software & Hardware solution: capable to administrate and record tele sessions, integrate with EHR, EMR, HIS systems (particularly Santa-HIS, used in VULSK), providing unlimited or at least 10 client software licenses for Windows and iOS devices.

It is planned to obtain 10 equipment sets for 4 sites (3 remote and 1 in VUHSK Family Centre). Sets will be of 3 different types:

**TYPE1 – 4 sets**, 1 for each pilot site:

- Tablet computer (Type 1)
  - Windows 8 compatible, with teleconferencing client, able to transmit audio, video and desktop sharing, equipped with Wi-Fi Access Point
- Diagnostic equipment (Type 1) – 4 sets
  - ECG device, fully diagnostic, 12 lead, wireless, integrated with Tablet computer (i.e. Customed Custo cardio 100)
  - Ophthalmoscope with iPhone connectivity (i.e. WelchAllyn iExaminer)
  - Dermatoscope Type 1 with iPhone connectivity (i.e. FotoFinder HandyScope)
  - Blood Pressure Monitor with iPhone direct or Wi-Fi connectivity (i.e. Withings)

**TYPE2 – 2 sets**, 1 for VUHSK and 1 for one of the remote sites:

- Tablet computer (Type 2)
  - iOS compatible, with teleconferencing client, able to transmit audio, video and

desktop sharing (i.e. iPad Mini with Vidyo client), equipped with Wi-Fi Access Point (i.e. AirPort Express Base Station)

- Diagnostic equipment (Type 2)
  - Dermatoscope Type 2 with iPad connectivity (i.e. Dermlite II Hybrid M)
  - Blood Pressure Monitor with iPhone or iPad direct or Wi-Fi connectivity (i.e. Withings)

**TYPE3 – 4 sets**, 1 for each pilot site:

- Tablet computer (Type 2)
  - iOS compatible, with teleconferencing client, able to transmit audio, video and desktop sharing (i.e. iPad Mini with Vidyo client), equipped with Wi-Fi Access Point (i.e. AirPort Express Base Station)
  - Blood Pressure Monitor with iPhone or iPad direct or Wi-Fi connectivity (i.e. Withings)

**Mentoring sessions carried out**

Did not start yet. According to pilot time table, planning to start September 2013.

**Experiences from carried consultations/mentoring sessions**

Tele-consultations did not start yet. According to pilot timetable, planning to start September 2013.

**Level of satisfaction of staff and description of experienced setbacks and hurdles**

Tele-consultations did not start yet. According to pilot timetable, planning to start September 2013. Evaluation of satisfaction and first results are planned December 2013

**Description of factors for success we have identified and other issues**

Not identified yet

**Description of the documentation of the mentoring sessions.**

N/A

**What actions for sustainability of your pilot project have been taken or do you plan to take?**

It's planned that professional network created in the pilot will remain functional after the pilot project is over. If proven successful, tele-mentoring procedures will be used for tele-education and collecting of the continuing medical education credits. Equipment, used in pilots and proven as successful choice will be used as prototype set for all country's Family centres.

**How do you transfer experiences from the pilot into the organisations involved?**

Experiences are transferred by reporting and through common meetings. Tele-mentoring will be part of daily working more widely.

**Describe the organisation of your pilot - staff, management etc.**

As mentioned before, 3 remote pilot sites: Anykščiai PHC, Druskininkai PHC and Neringa PHC and VUHSK Family centre (Primary Health Unit) will participate as mentees and sites requesting telemedicine sessions.

Vilnius University Family medicine specialists, working in VU Hospital Santariskiu Klinikos (teaching hospital) will be mentors in the pilot. Other specialists of VU Hospital will also participate in telemedicine and tele-mentoring process, as specialities like Ophthalmology, Cardiology and

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Dermatology are involved in our pilot. VUHSK Informatics and Development Centre specialists (involved in the pilot) will be responsible for all kind of technical support (ICT and medical diagnostic equipment), Information system integration, development and adaptations of the specific software tools, required by mentors and mentees.

## 8.6. Pilot 6: Estonia Vormsi Primary Health Care Centre – GP support

### Estonian Health Services

#### **Aim of your pilot project, i.e. the benefit you hope to gain through the project or the problem you hope to solve.**

Vormsi is a small Island with 400 inhabitants, during the year 200 and on the list of Vormsi Primary Health Care Centre, there are 103 patients. There is no hospital on Vormsi, but only the Vormsi Primary Health Care Centre. The aim of the pilot project is to reduce the patients' visits to the distant mainland hospitals and professional doctors. It should save money and time.

#### **Goals of your pilot project, i.e. the project goals you have set up that are measurable.**

We are planning to perform 30 consultations during the pilot (20th of February till the 1st of December 2103)

#### **Describe the pilot timeline and what the status for your project is and when you expect to finish.**

The Vormsi pilot has started on the 20th of February 2013 and the start-up phase is over and we expect to finish the pilot by the 1st of December 2013. After the pilot end the final evaluation has been planned.

#### **Technical status, what technology did you purchase or do you plan to purchase and where are you on implementing these.**

We have not planned to purchase any technology for the pilot from PrimCareIT project, because we started to use the new tele-consultation equipment available at the Vormsi Primary Health Care Centre.

We are using the remote consultation set to make the tests and analyses and using the Skype for the communication between the nurse-GP-other professional.

- Possibilities for e-consultations
  - The suitcase
    - Spirograaf
    - EKG
    - SpO2
    - RR
    - Otoskoop
    - Kaamera, koos suurendusega
    - Termomeeter
    - Stetoskoop





- Labor
  - CRV
  - Troponiin
  - Hgb, Hematokrit
- Digital photcamera, camera includes Skype ja Bluetooth devices (it allows during the home visit to forward pictures and videos and the data from the home-monitoring devices.)
  - Glükomeeter
  - RR aparaat
  - Ekg
  - SpO2
  - Termomeeter

All the data, analyses and consultations can be saved into the Artisportal. Artisportal is a web-based software for Primary Health care doctors.

We have two different kind of consultations:

- **Online** - the Skype is used for the consultations
- **Offline** - nurse loads all the medical data and analyses to the Edgevise platform and sends the notes via Skype, that the data needs to be observed.

#### **Consultations or mentoring sessions carried out so far.**

The tele-consultations in Vormsi Primary Health Care centre are performed about once a week, for now, we have performed all together about 15 consultations. These consultations are performed between nurse of the Health centre and the GP of the same centre.

#### **Experiences from carried out consultations/mentoring sessions.**

Nurses are used to the new technology and it is very convenient way for them to contact the GP, who is often out of the Health centre.

#### **Level of satisfaction so far staff/patients (or other stakeholder) if measured.**

Patients are satisfied that they are enabled to do many tests and analyses on Vormsi island and they don't have to make a long and also expensive trips to the mainland.

#### **Please describe any setbacks or hurdles you have experiences so far.**

We can't say, that we have had any serious setbacks so far. At the beginning it was unfamiliar for the nurses to use the tele-consultation suitcase with so many options. It takes time to get used to it.

#### **Please describe any factors for success you have identified so far.**

The training for the personnel, how to use the new technology is very important.

#### **Others issues you would like to input.**

NA

#### **Describe how you have documented consultations/mentoring sessions.**

We have documented the consultations in a very simple way. The data consists of date and time of the consultation, way of tele-consultation, short description of the matter and analyses done and who is involved in the consultation.

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**What actions for sustainability of your pilot project have been taken or do you plan to take?**  
 We certainly plan to continue the tele-consultations in the Vormsi Primary Health Care Centre after the pilot end.

**How do you transfer experiences from the pilot into the organisations involved?**  
 Introducing the evaluation of the pilots to the organisations involved.

**Describe the organisation of your pilot - staff, management etc.**  
 Vormsi Primary Health Care Centre is very small organisation.  
 Staff: 2 doctors and 2 nurses.  
 It is opened 5 days per week and 8 hours per day

**Other material**

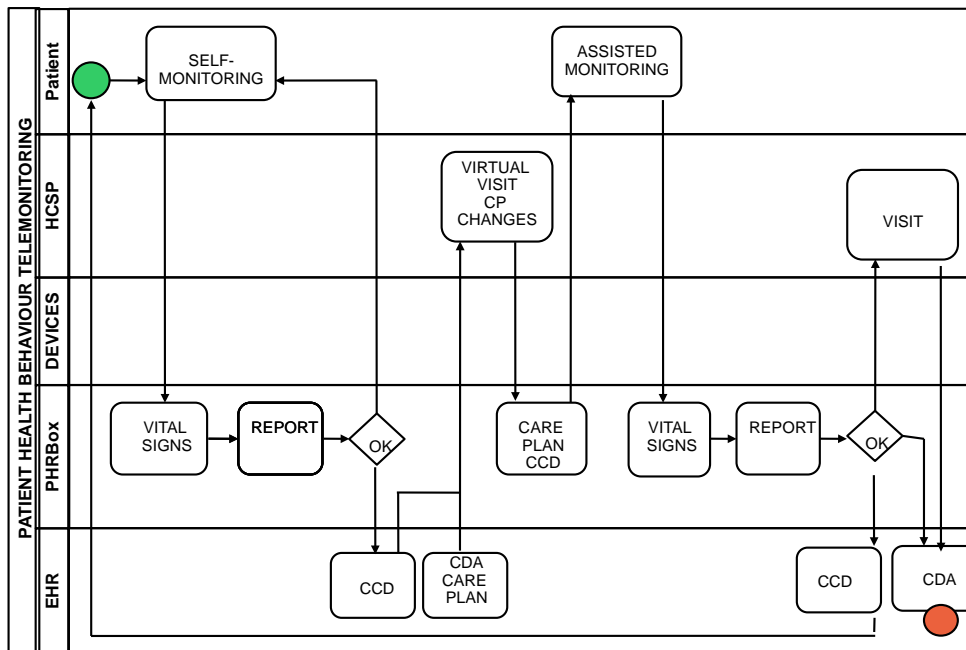


Figure 7. Tele-monitoring plan

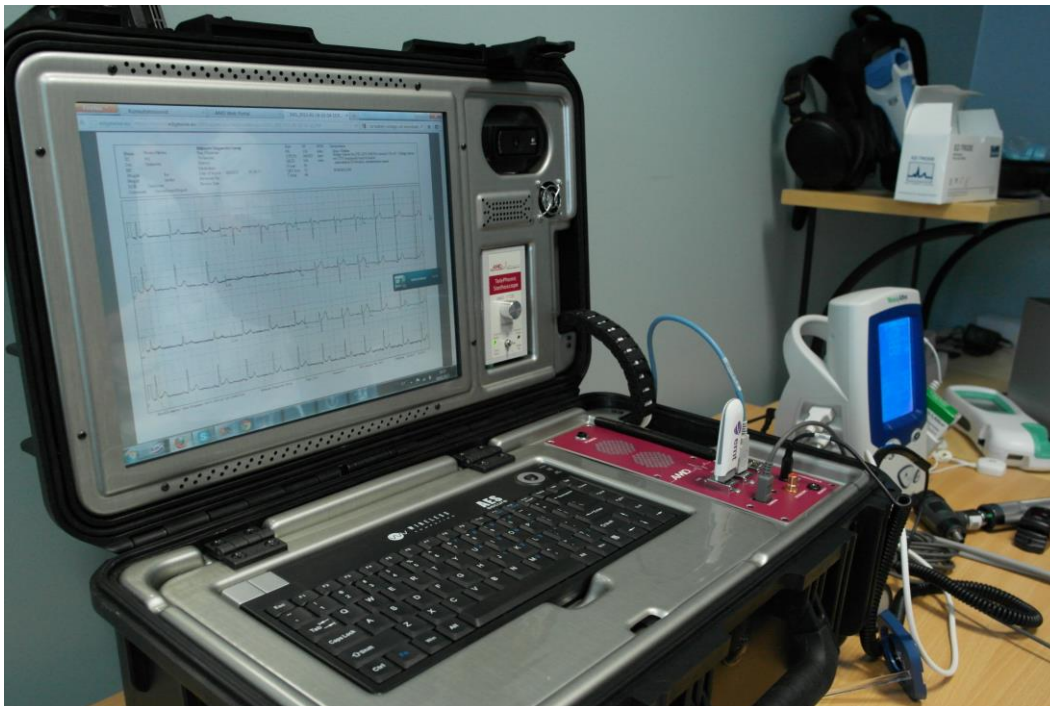


Figure 8. Tele-monitoring set

### PARTNERS FOR TELEMEDICINE SERVICE

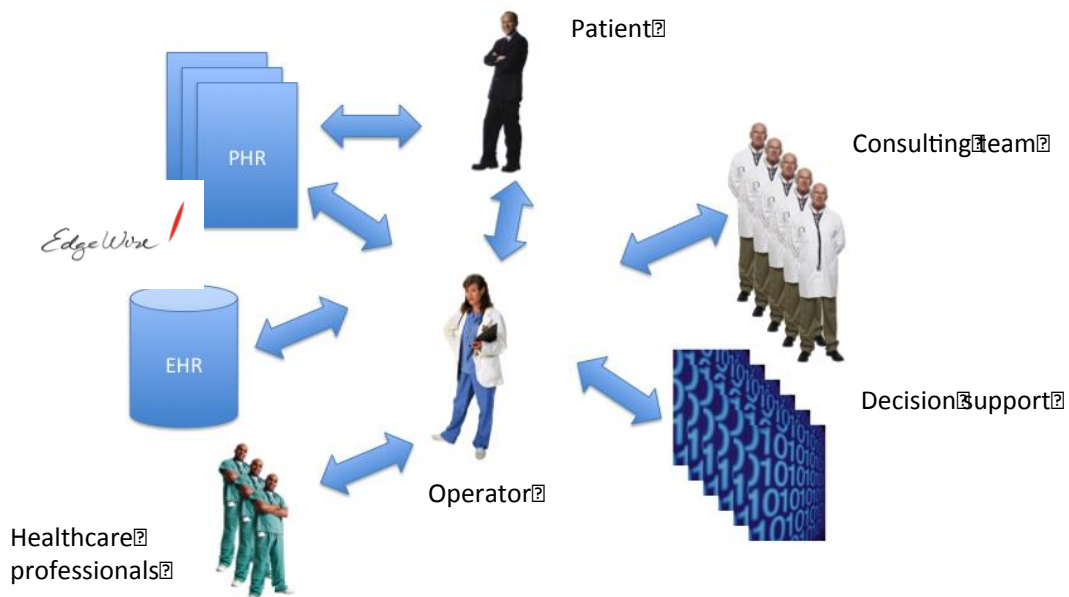


Figure 9. Telemedicine services in Estonia.

## 8.7. Pilot 7: NHS – Supporting GPs from remote areas via tele-consultations

### National Health Service

#### **Aim of your pilot project, i.e. the benefit you hope to gain through the project or the problem you hope to solve.**

The aims of the NHS pilot project is to introduce the first telemedicine solution (tele-consultations) for primary health care in Latvia with further aim to organise bigger network for PHC specialists, to increase primary health care specialists knowledge, understanding and skills in rural areas and to increase treatment quality, safety, professional medical investigation and treatment. It is important to bear in mind that health economic gains from a national health care perspective as well as well from an individual patient perspective.

#### **Goals of your pilot project, i.e. the project goals you have set up that are measurable.**

The Pilot project goals are to create system that allows to increase the accessibility to specialists, especially in rural areas, increase satisfaction level of patients, increase cost-efficiency of whole health care system by introduction of ICT tools.

Overall goal is to increase of cost-efficiency of the health care system in Latvia.

#### **Describe the pilot timeline and what the status for your project is and when you expect to finish.**

National Health Service (NHS) has leased eight tablets and transferred them to pilot GP's to ensure pilot activities. The first meeting for in Pilot involved sides was organised in middle of March, when all in pilot involved GP's were introduced with the main purpose of project and with both organisations, who will provide tele-consultations – the company "Telemedica" and Latvian Society of Cardiology.

The Telemedica's representative trained Pilot GP's to use their tablets as main tools for tele-consultations.

NHS has signed cooperation agreements with all eight in pilots involved GP's and with Telemedica, who provide tele-consultations in dermatology and endocrinology, as well as with Latvian Society of Cardiology, who provide tele-consultations in cardiology.

For provision of tele-consultations two new email addresses were created:

telekardiologija@stradini.lv (for tele-consultations in cardiology) and PrimCareIT@telemedica.lv (for tele-consultations in dermatology and endocrinology). Tele-consultation provider must render a response within three days.

In order to facilitate enumerations of tele-consultations the Pilots were named after their location. For example in Kurzeme there are four pilots - Ruba, Skrunda, Aizpute, Piltene.

If someone of pilot GP's needs an advice, he can address his question to Telemedica or Latvian Society of Cardiology or to another from eight in project involved GP's.

### Scheme of pilot project

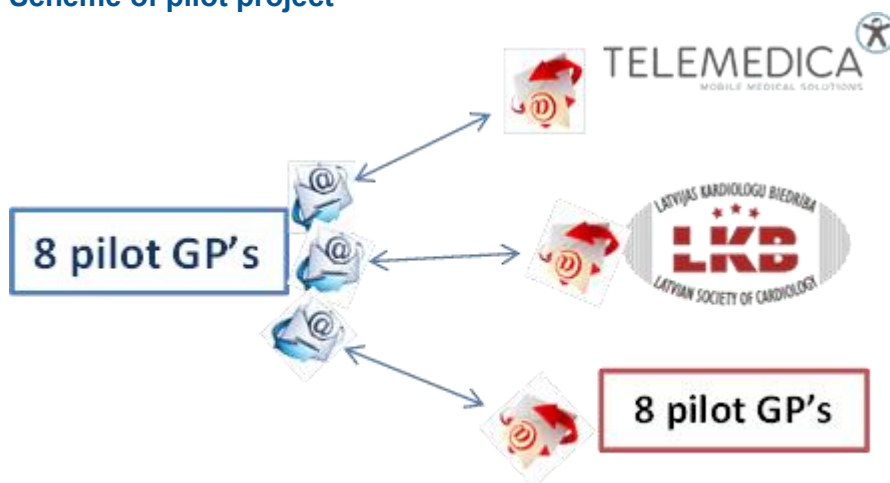


Figure 10. Scheme of pilot 7

The tele-consultation provided report was created with an aim to collect data for tele-consultations from Telemedica and Latvian Society of Cardiology. Accordingly terms of the contract *tele-consultation provided report* needs to be submitted prior the fifth date of each month. But to assess the pilot's GP's satisfaction with both the benefits of technological solutions and with the content of tele-consultation is used in WP4 developed questionnaire. Accordingly terms of the contract pilot GP's needs to submit their questionnaires about all tele-consultations in the current month up to tenth date of the month.

Pilot projects is running from 1<sup>st</sup> April 2013.

The mid-term workshop with stakeholders and all involved parties in the Pilot in Latvia will be organised in Vidriži (Latvia) 2 and 3 August. The NHS will give presentation on first results of the Pilot and involved parties will declare their opinion. During discussions we will find what has to be exchanged in the organisation of tele-consultations.

The Agreements with all involved parties are signed till 31 January 2014. We expect to finish our pilot project in December 2013. We plan to finalise our proposal for introduction of tele-consultations in Latvia for Ministry of Health of Latvia in January 2014.

### Technical status, what technology did you purchase or do you plan to purchase and where are you on implementing these.

It was planned to purchase 8 tablets. Unfortunately we had problems with procurement and we leased them instead of buying. All 8 tablets have been transferred to pilot project GP's. During the WP4 workshop in March 2013 the training in tablet usage was organiser for pilot project GP's. During the workshop it was agreed that the starting of pilot in Latvia will be 1<sup>st</sup> April 2013. This was done.

### Consultations or mentoring sessions carried out so far.

8 tele-consultations have been carried out till 31<sup>st</sup> May 2013:

- 3 in dermatology;

Output 4.3: Mid-term evaluation report in tele-consultation implementation including necessary adjustments



- 3 in endocrinology;
- 1 in cardiology;
- 1 between GP's.

#### **Experiences from carried out consultations/mentoring sessions.**

The first experience additionally to questionnaires will be obtained during the mid-term workshop in 2-3 August 2013. After this workshop the best experience will be recommended for all GPs involved in the pilot.

#### **Level of satisfaction so far staff/patients (or other stakeholder) if measured.**

Not all of pilot project GP's have submitted fully filled questionnaire – therefore it is difficult to evaluate their satisfaction level with provided tele-consultations in the starting period of the Pilot.

#### **Please describe any setbacks or hurdles you have experiences so far.**

There were problems with the purchase of equipment – the firm, who has a contract with NHS offered the tablets at a high price, therefore we chose to lease them.

Due to problems with purchase of equipment delayed the start of pilot project.

Also signature of the contract with Latvian Society of Cardiology took a long time. That was the reason why tele-consultations in cardiology started later than tele-consultations in dermatology and endocrinology.

#### **Please describe any factors for success you have identified so far.**

In pilot project involved GP's from rural area have expanded their range of professional contacts. They have possibility to consult with high level professionals. GPs are showing the biggest interest in opportunity to get consultations in dermatology.

#### **Others issues you would like to input.**

We are working in two directions.

Regarding the health care service providers we try to more integrate primary health care and specialist care by increasing the role of general practitioners as main contact point for patients. In the same time GPs by using tele-consultations GPs reduce the professional isolation and increase professional level in specialities where they can get tele-consultations from specialists.

Regarding the patients we reduce the waiting time for specialist consultations and increase accessibility of specialist care. The patients from rural area have not to travel to cities for this kind of health care services.

#### **Describe how you have documented consultations/mentoring sessions.**

NHS has signed cooperation contracts with eight pilot project GP's and also with Telemedica (provide tele-consultations in dermatology and endocrinology) and with Latvian Society of Cardiology (provide tele-consultations in cardiology).

Accordingly terms of the contract tele-consultation providers (Telemedica, Latvian Society of Cardiology, GP's who have consulted other pilot GP's) needs to fill in and submit the *tele-consultation provided report* and it needs to be submitted prior the fifth date of each month. But to assess the pilot's GP's satisfaction with both the benefits of technological solutions and with the content of tele-consultation in WP4 developed questionnaire is used. Accordingly terms of the contract pilot GP's needs to submit their questionnaires about all tele-consultations in the current month up to tenth date of the month.



**What actions for sustainability of your pilot project have been taken or do you plan to take?**

The PrimCareIT Conference was organised 1 February 2013. The conference was opened by Minister of Health Ingrida Circene. The audience (104 participants and all stakeholders were introduced with project PrimCareIT message.

The key stakeholders are involved in preparation of strategy for introduction of tele-consultations in Latvia.

The working group in MoH of Latvia is established to develop the Strategy for Primary Health care services 2014-2016.

14 March the workshop with stakeholders and all involved parties in the Pilot were organised. The workshop was opened by representative from MoH of Latvia.

The GPs in Kurland pilot area are introduced with expected results during the workshops in Liepaja.

The PrimCareIT conference will be organised in December 2013.

**How do you transfer experiences from the pilot into the organisations involved?**

Our Partners are Associations of GP and rural GP. The representatives of these Associations are our Pilot GPs. During they internal activities the transfer of the first experience are transferred to the most of Latvian GP's.

**Describe the organisation of your pilot - staff, management etc.**

All activities are coordinated and managed by project unit of NHS: Project manager Aigars Miežitis, Project assistant Madara Vegnere and Project financial manager Jana Lapurina.

**Additional material**





### PrimCareIT: Questions for pilot sites

#### Data to be provided after each individual connection:

- 1) Name of the pilot site:
- 2) Tele-mentoring or tele-consultation?
- 3) Date of the connection:
- 4) Number of connection (1<sup>st</sup> connection=1; 2<sup>nd</sup> connection=2 etc.):
- 5) Between whom was the connection taken?
- 6) How satisfied were you with the functionality of the used technology during the connection?
  - o Rate the connection by scale 0-100% (rating can be also between the given percentages!):



- 0% =I wasn't satisfied at all
- 25% =I wasn't satisfied
- 50% =Connection was neither good nor bad
- 75% =I was satisfied
- 100% =I was very satisfied

- 7) How useful do you consider the content of the session was?
  - o Rate by scale 0-100% (rating can be also between the given percentages!):



- 0% =It wasn't useful at all
- 25% =It wasn't so useful
- 50% =It was neither good nor bad
- 75% =It was quite useful
- 100% =It was very useful

**PrimeCare IT: Counteracting brain drain and professional isolation of health professionals in remote primary health care through tele-consultation and tele-mentoring to strengthen social conditions in remote BSR.**

[www.primcareit.net](http://www.primcareit.net)



Figure 11. Questions for pilot sites





**Tele-consultation provider report**

Name of the pilot project: \_\_\_\_\_

Report Nr. \_\_\_\_\_

(Month)

Nr.	Pilot Project to whom tele-consultation was provided	Date of tele-consultation	Duration of tele-consultation (min.)	Diagnosis (SSK-10)	Description of teleconsultation (1-2 sentences)



Figure 12. Template for tele-consultation providers.

### 8.8. Status of the pilots

The table below shows the status of all pilots:

Pilot no.	Status	Risks and mitigation
1	Green	R: Too many different deployment scenarios. Might be hard to collect and compare data. M: Harmonize cases and focus fewer scenarios.
2	Green	R: Lacking equipment. M: Get financials in order to fix equipment.
3	Orange	R: Delay in results because of technical issues. Only few sessions done. M: Talk to other pilot sites in order to resolve issues, and move faster.
4	Green	R: Documentation of sessions in protocol. M: Make sure sessions are documented so that proper evaluation of the sessions can be made, and success factors identified.
5	Orange	R: Sessions not started. M: Even if timetable says September there is a risk in not arriving with results in time.
6	Green	R: reporting protocol does not cover aspects of interest for evaluation. M: Make sure reporting protocol from sessions contains enough information in order to have possibility to evaluate success factors.
7	Green	R: Delay because of purchasing. Not getting questionnaires back. M: Put extra focus on moving agenda for pilots closer in time. Direct contact with testing people, and possibly ease reporting procedures to get questionnaires back.

Table 10. Collective status of pilots and mitigation

## 9. List of References

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i Yin, R.K. (2003) Case Study Research - Design and Methods, Newbury Park, Sage.

