



GROWTH OF THE QUALITY OF MEDICAL SERVICES IN RURAL AREAS USING A TELEMEDICINE INFORMATIC SYSTEM

GOOD PRACTICE - PROJECT



European Union
European Regional
Development Fund

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Introduction to the Good Practice:

This GP sustain the achievement, at the level of the family doctor, a better management of chronic health problems with major impact on the elderly, with the support of specialists through the telemedicine system.

Problem:

1. Specialized healthcare for patients who are isolated due to geographical conditions, degradation, age or disability.
2. Increased home care with medical services by reduction of hospitalization, emergency system requests, hospital admissions requests, hospitalization costs

Solution:

- The sole solution to compensate these problems (at short term) in to use the telemedicine solution (especially in rural areas and small towns). Consequently, the project has implemented the solution involving in the project family doctors from the selected area (three counties from the south east, including the Danube Delta, three regional hospitals, and the IT services provided through an acquisition of the system having as beneficiary the Ministry of health (servers, network, software) and as administrator the Governmental Service for Telecommunication (in order to ensure the security of the data). For the family doctors, the project gives IT terminals (with video cameras), medical analyzers with internet connection, EKG-meters with internet connection. The regional hospitals own terminals and adequate interface for connection with the family doctors

Impact:

- 198 family doctors from three counties were selected and prepared to use the telemedicine services and adequate devices (including portable devices for life support and analyses)
- 510 specialists from big health units (including emergency services) were prepared and included in the programme
- Over 400.000 people from rural areas with rapid access to the programme (meaning almost all medical services provided in a hospital)
- An informatic system at national level, allowing development of service areas and the programme. The informatics system has as owner the Ministry of health (meaning servers, other IT infrastructure and a secure broadband network) and the access into the system could be improved based on protocols, with other interested stakeholders.
- For the public entities there is a financing line under Competitiveness program 2014 – 2020 for developing the services so that the system is implementable to other counties.

1. Relevancy of the Good Practice (GP) project

The “Relevancy of the GP project” section provides quick check and definition of its relevancy in regards to HoCare project objectives.

Good practice of quadruple-helix cooperation in R&I? (If not, do not continue)	Yes, this GP project includes good practice of quadruple-helix cooperation in R&I
Good practice of delivery of Home Care R&I?	Yes, this GP project includes good practice of delivery of Home Care R&I.
If this GP does not include good practices of delivery of Home Care R&I, please describe and prove its potential for transferability to delivery of Home Care R&I	Tangentially health care and home care.
Generation of innovation in home care through answering unmet needs identified by formal or informal healthcare providers?	Yes, this GP project includes good practices of innovation through answering unmet needs.
Generation of innovation in home care through public driven innovation?	Yes, this GP project includes good practices of public driven innovation.
Generation of innovation in home care via quadruple-helix cooperation for quicker delivery to the market?	No

2. Quick overview of the GP project

The “Quick overview of the GP project” section provides initial overview of the good practice project (GP project) and enables readers to see if this GP project idea is relevant for possible transfer to their organization potential innovation activities.

Name of the GP project	Growth of the quality of medical services in rural areas using a telemedicine informatic system
Region of origin of GP project	Romania
5 keywords that best describe the content of the GP project	<ul style="list-style-type: none"> -Telemedicine, -Family doctors -Rural areas, -Small towns -Elderly
Relevant Operational Programme name	The Project phase 1 was financed through Sectoral Operational Program Increase of Economic Competitiveness (2007 – 2013) (Programul Operational

<p>through which the GP project has been funded (+ also in local language in brackets)</p>	<p>Sectorial Cresterea Competitivitatii Economice 2007-2013) The Project is financed in Phase 2 through Operational Programme Competitiveness (2014-2020) (Programul Ooperational Competiivitate 2014-2020)</p>
<p>Relevant support programme / intervention area name of the GP project through which it was funded (+ also in local language in brackets)</p>	<p>Priority Axis III - "Information and Communication Technology for Private and Public Sector", Operation 3.2.4 Supporting the implementation of e-health solutions and ensuring the broadband connection, where necessary (Axa prioritara III – „Tehnologia Informatiei si Comunicatiilor pentru sectoarele privat si public”, Operatiunea 3.2.4 Sustinerea implementarii de solutii de e-sanatate si asigurarea conexiunii la broadband, acolo unde este necesar)</p>
<p>Single or multiple recipients of the GP project?</p>	<p>Multiple recipients</p>
<p>Type of lead recipient (SME, LME, research centre, innovation centre, network/association, university/school, municipality, other public body, other (specify))</p>	<p>Family doctors, patients, hospitals, citizens of all ages located in rural area in Danube Delta region.</p>
<p>Types of participating partners (list all participating partner types. E.g.: hospital, social house, senior house, patient association, networks, SMEs, LMEs, research actors, business supporting organizations, public institutions/regulators, other (specify))</p>	<p>Large Industry, SME (Industry and Consultancy), Research organizations, Academic and</p>
<p>Summary of the good practice</p>	<p>Romania has adopted a strategy for the use of eHealth to Improve Patient Health, Increase Transparency in the Medical System, and reduce the cost of medical services and their reimbursement. Health services in Romania are sometimes characterized by lack of continuity, duplication of medical records or loss of patients and overloading of hospitals. The expansion of telemedicine systems in Romania has seen a remarkable dynamism in recent years, coupled in particular with the development of the Emergency Medicine System. Accessibility to rural or poorly accessible health services is a priority of national health policies for faster resolution of medical problems and reduced costs for the patient and the health care system. The geographical distribution of specialist doctors is heterogeneous. The rural area is totally uncovered by specialized doctors and at the level of the small towns there are many counties that have only 3 or 4 specialties with specialists. Even at the level of the county hospitals (which are the most important providers of medical services in a county, which are not traditional university centers) there are specialties not covered by specialists. Practically, only university centers will remain well represented with specialist doctors and at the level of small towns will remain with only one or two specialist doctors. The only short and medium term solutions are telemedicine solutions. In order to increase the quality of the medical act and to improve the health of the population in the rural area, it has been done at the level of the family doctor the management of the chronic diseases with a major impact on the population, with the support of specialists through the telemedicine system.</p>

	<p>An experiment conducted at Pediatric Hospital in Galați and initially focused on tele-ultrasound, that is, the realization and transmission of ultrasounds at a distance of 2,500 kilometers, from the Galați Hospital to the Tours Hospital (France) was the basis for the development of a project of the Ministry of Health involving 198 family doctors from Galați, Braila, Tulcea and Constanța counties and 510 doctors of different specialties.</p> <p>Family doctors will consult their patients in the office in the commune and through the special telemedicine equipment will forward analyzes made at the offices of specialists with whom they will collaborate to establish the diagnosis and implicitly prescribe the treatments.</p> <p>Nearly 200 family doctors in the rural areas of Galați, Braila, Tulcea and Constanța received portable equipment for various analyzes, and were trained to use them so that chronic patients will no longer have to travel tens of kilometers to the city to perform various analyzes.</p> <p>The system interacts with the following actors:</p> <ul style="list-style-type: none"> • Family physician: is the doctor who provides and coordinates primary care and has a permanent patient under the law. He/she is the one who integrates and coordinates the medical services provided to his patients and is the only one who can initiate and close the medical care episodes in the Telemedicine Informatics System. • Specialist: is a physician with one or more additional specializations, obtained and practiced under the conditions specified by law, which provides the expertise needed to solve a medical episode. • Operator: is the person under the authority of the Ministry of Health or one of its coordinated entities, which is responsible for tracking the performance and performance indicators of the Telemedicine Information System. • System Administrator: it is the person employed under the authority of the Ministry of Health or a third party authorized by it to operate the Telemedicine Informatics System technically and to ensure its functionality in accordance with the specifications. • Patient: is the person who is in the permanent medical care of a family doctor and who is the ultimate beneficiary of the services provided by the Telemedicine Information System. <p>Within the project were trained</p> <ul style="list-style-type: none"> • 198 family doctors for the use of medical-informatics equipment and on using the application • 510 specialists from Brăila, Galați, Tulcea, Constanța, Craiova, Timișoara, Cluj, Târgu Mureș, Iași and Bucharest regarding the use of the application • 20 operators for the Telemedicine Information System • 4 administrators of the Telemedicine Information System
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3. Transferability

The “Transferability” section provides more detailed review of strengths and weaknesses of this GP project including description of necessary basic conditions for region and leading organization to potentially transfer it. At the end of the section, the key threats in the successful transfer open up possibility to focus on specific relevant issues important for the successful transfer.

Strengths and weaknesses of the project

What are the GP project strengths? Why it was funded?	<p>Benefits for doctors: Communication / Collaboration with specialists, Direct access to the patient's electronic file, Saving time with moving in isolated areas, Improving continuous training, The provision of medical equipment in the cabinet of family doctors: Family doctors will also be able to use the devices for consultation outside of the telemedicine system</p>
What are the key	The project has been finalized recently and it is in the phase of extension to other

weaknesses of the GP project?	counties with rural uncovered by medical services. This extension could affect the financing level of the initial solution so that the equipment costs be increased.
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Basic conditions for successful transfer

Why is this GP project transferable? – innovation, impact, financial, legal, and timeframe aspects	The project was designed as a pilot to be implemented to 4 counties and intended further to be extended to the country, So the project is transferrable at national level. It could be transferable to regional level given the interoperability and compatibility with the technical and non technical dimensions.
What are the basic conditions the region needs to have to be successful in transferring this good practice?	An openness for medical staff to use the equipment, to train and use the medical file of patients as in the original region.
What are the basic conditions the leading recipient from the region needs to have to be successful in transferring this good practice?	To assure the organizational capacity and the adequate training to effectively transfer this good practice OR to identify the most suitable private or public partners able and willing to do this. To secure the long-term sustainability of the GP.

Key threats in GP project transfer

What are the key potential threats for the GP project transfer?	Not identifying and validating the most adequate support for long-term sustainability. Local peculiarities.
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4. Description of the GP project

The “Description of the GP project” section provides more detailed information on the Good Practice project (GP project) and enables readers to get further detailed inspiration and easy ready-to-use information for possible innovation transfer to other project applications. This includes: tackled problem, time length of the GP project, objectives, phases, activities and deliverables of the GP project, its main innovation and target group.

Description of the tackled problem

What was the problem / challenge tackled by the project?	There are many doctors leaving the country for a better life and work conditions. The project is intended to create excellent conditions for work for doctors with patients in the rural area with difficult access In the same time the problems of specialized healthcare for patients who are isolated due to geographical conditions, degradation, age or disability and the necessity for an increased home care with medical services by reduction of hospitalization, emergency system requests, hospital admissions requests, hospitalization costs are the main challenges
What were the reasons for the problem?	The need of an increased quality of the medical care to all patients but especially for those in critical area and with chronic health problem.

Time length of the GP project

What was the time length of the GP project in months?	24months
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Objectives of the GP project

<p>Describe the overall and specific objectives of the GP project</p>	<p>The overall objective: the achievement at the level of the family doctor of chronic disease management with major impact in the population, with the support of specialists through the telemedicine system.</p> <p>Specific objectives:</p> <ul style="list-style-type: none"> • Making Chronic Disease Management with Major Impact in the Population at the Family Doctor level with the support of specialists through the telemedicine system; • Providing post-hospitalized ambulatory medical services to patients dispensed from hospitals via telemedicine; • Facilitating rural population access to specialist ambulatory services with telemedicine solutions; • Medical expertise available equally, regardless of where the patient lives; • Providing quality information and services to patients; • Improving the quality of medical decisions by ensuring greater availability of existing information in electronic format; • Improving the efficiency and productivity of health services by reducing routine administrative work, due to information in electronic format;
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Phases, activities and deliverables

<p>List all main phases of the GP project including their time length</p>	<ul style="list-style-type: none"> - Tender for services offer - Platform Specifications: 4 months - Platform Development (including 3 iterations): 10 Months - Services / Content creation (in 2 iterations): 4months - Pilot Testing / Evaluation: 6 Mon
<p>List and describe all main activities that were implemented by the GP project</p>	<ul style="list-style-type: none"> - Project Management inclusive the public procurement - User & Other Stakeholders Requirement / Platform Specifications - Platform Development, Integration & Implementation - Pilot Testing, Evaluation & Validation - Dissemination activities (The Opening and Closing Conference)
<p>List all main deliverables of the GP project</p>	<ul style="list-style-type: none"> - User requirements - Platform specifications - Services specifications - Training for medical staff - Digital Literacy and SIT Services - Pilot Testing, Evaluation and Validation

Main innovation of the GP project

<p>What was the main innovation of the GP project?</p>	<p>The main innovation of the project is the creation and operation of a sustainable information system for telemedicine for rural areas considering the homecare of elderly among the users and beneficiary of telemedicine.</p>
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Target group of the project

<p>Who was the main target group of the GP project? (SME, LME, research organization, university, public institution, healthcare provider, business supporting organization, other</p>	<p>Ministry of Health, General Directorates for public health Emergency Counties Hospital 198 family doctors for the use of medical-informatics equipment and on using the application 510 specialists from Brăila, Galati, Tulcea, Constanța, Craiova, Timișoara, Cluj, Târgu Mureș, Iași and Bucharest regarding the use of the application Almost 400 000 people who represent the registered population on family doctors</p>
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(specify)	in rural area with difficult accessing conditions.
Describe the main target group	<p>The number of physicians in Romania is steadily decreasing and especially by specialist doctors. The time needed for the system to cover this deficit is very high and the offerings of developed countries are very attractive to them. The only quick and effective solution is to introduce telemedicine solutions for rural areas in Romania. So, More than 14,000 doctors (over 30% of their total) have gone from Romania in the last 5 years, according to College of Physicians.</p> <p>The family doctors now have an easy communication / collaboration with specialists, direct access to the patient's electronic file, saving time with moving in isolated areas, an improving continuous training, medical equipment in the cabinet of family doctors(Ultrasound, EKG, analyzer, monitor vital signs, Spirometer)</p>

5. Impact

The "Impact" section provides more detailed information on the effect of the GP project implementation and dissemination of major outputs.

Impact

What was the level of geographical impact of the GP project? (village, city, county, country, international, other (specify))	National
What were the final impact indicators including their quantification ?	An increased level of health and reduced costs
Describe the changes resulted from the project activities	Family doctors have an easier work for their patients health monitoring and have portable medical equipment.

Dissemination of outputs

Describe dissemination activities of the project outputs carried out during the GP project	During the project its concept and development has been disseminated through public events relevant to the stakeholders and according the Operational Programme requests.
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6. Risks

The "Risks" section provides more detailed review of potential risks of this GP project implementation including their defined mitigation strategies to eliminate them.

Describe risks involved in implementing this GP project including their mitigation strategies	<p>The system SIT being designed to be interoperable with existing system specific to Romanian health system suppose the caring out of a study of compatibilities and interoperability in the new context.</p> <p>The Romania under OP Competitiveness (OPC) or Administrative Capacities (OPAC) or other programmes could fin a way to provide such a study..</p>
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7. Budget

The “Budget” section provides more detailed review of costs regarding the project implementation as well as operational sustainability after its end. In addition, if relevant, public tenders within the project and additional generated incomes by the project are showed and explained.

Budget

What was the overall budget of the project in EUR?	€ 18.2153500
List relevant budget lines of the project including their % share from total budget	Staff costs – 20% Administration – 5% External expertise – 20% Travel and accommodation – 2% Meetings and events – 1% Promotion costs – 1% Equipment – 50% Other – 1%

Additional income generated by the project

Did the project create any additional income ?	no, the GP project did not generate additional income
If yes, specify which type of income and what amount in EUR ?	

Public tender

Did the project include any public tender ?	Yes, the project included a public tender and 6 consortium participated.
If yes, specify what kind of contract (specific contract, general contract, other)	General contract
If yes, specify in what amount in EUR	€ 18.2153500
Describe the public tender subject (max 2000 characters)	N/A

Financial sustainability after GP project end

Was there an operational financial sustainability plan in the project after its end ?	No, the GP project did not include an operational financial sustainability plan but a 5 years support.
If yes, specify where the operational funds after project end came from ?	N/A
If yes, specify the amount of operational funds in EUR	N/A

8. Other information

In this section, specific additional information about the GP project could be revealed.

Please describe any other relevant information about this GP project (if relevant)	<ul style="list-style-type: none"> - https://www.formaremedicala.ro/sistem-informatic-de-telemedicina-pentru-mediul-rural/ - http://stiridegalati.ro/telemedicina-in-comunele-galatene-echipamentele-sunt-distribuite-medicilor-de-familie/
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9. Information gathered by ...

The information about this good practice (GP) project has been gathered for the purpose of the HoCare project (Interreg Europe Programme) by the following organization:

Region	Romania
Organization name(s) (+ in local language in brackets)	National Institute for Research and Development in Informatics (Institutul National de Cercetare Dezvoltare in Informatica)
Name of the contact person(s)	Gabriela Florescu
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