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D.8.4 Clustering & Associated Partners

E. Kaldoudi

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Disclaimer

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Executive Summary

This deliverable presents clustering activities with other EU projects and beneficiaries for the dissemination and promotion of the use of intermediate technological results as well as major project outcomes. Also, this deliverable presents Associated Partners who joined the project during its duration.

About CARRE

CARRE is a project, funded by the FP7 Programme of the European Commission, which will provide an innovative means for managing comorbidities (multiple co-occurring medical conditions), with an immediate focus on chronic cardiac and renal disease patients or persons with an increased risk of such conditions.

Sources of medical and other knowledge will be semantically linked with outputs from sensors to provide clinical information, personalised to the individual patient that can help to support the tracking of the progression and interactions of comorbid conditions. Visual analytics will be employed so that patients and clinicians will be able to visualise, understand and interact with this linked knowledge and take advantage of personalised empowerment services supported by a dedicated decision-support system.

The ultimate goal is to provide, via an integrative approach, a means by which patients with comorbidities are helped to take an active role in care processes, including self-care and shared decision-making, and medical professionals are supported in understanding and treating comorbidities.

1. Clustering activities

Clustering activities during the project are summarized below, organized by project year:

Clustering activitie during 1st project year

1) Clustering with the Committee on Women in Medical and Biological Engineering (WiMBE), of the International Federation of Medical and Biological Engineering (IFMBE). CARRE Coordinator participated in the WiMBE regular virtual meeting on 29 Nov 2013 and presented the planned work for promoting gender balance. This was well received and the WiMBE President asked for a written summary of the project and how this addresses gender balance.
2) Clustering with Greek National Research Project, "eCP-Developing electronic clinical protocols", funded under programme Thales, 2012-2015, budget: 600.000€. CARRE Coordinator met with the eCP Coordinator Prof. I. Skalkidis, eCP WP4 leader Prof. N. Palikarakis and eCP team member Mr. I. Gardelis in Athens, on 11 Dec 2013. The CARRE coordinator presented the project goals and work plan. A detailed discussion followed on clinical protocols in case of comorbidities, protocol alignment and protocol repurposing. The discussion concluded that both projects should look closely on each other's work and developments: eCP should discuss clinical protocols in case of comorbidity and CARRE should discuss existing clinical protocols while designing patient empowerment services.
3) Clustering with European Society of Lifestyle Medicine. CARRE Coordinator met virtually with Dr. I. Arkadianos, ESLM Vice-President via skype on 19 Dec 2913. There was a discussion on the goals of the project and the Society, which concluded on expressing mutual interest. As a result CARRE was listed as a partner of ESLM; ESLM applied to become an Associated Partner of CARRE; and the President of ESLM Dr. M. Sagner was invited to act as a member of the CARRE Expert Advisory Board.
4) Clustering with the Hellenic Association of Renal Patients. CARRE Coordinator had a virtual meeting with the Vice-President of the Association Mr. C. Karagiozis on 27 Jan 2014 and presented the project. This was well received and the Association Vice-Presidents offered their help and support.
5) Clustering with members of the Oxford Academic Health Science Network, coordinated by John Domingue, OU. Preliminary discussions regarding collaboration have taken place with other members of the Oxford Academic Health Science Network, of which the OU is a member. Prof. John Fox from Oxford is increasingly interested in the management of comorbidities, and we will continue to pursue discussions with him regarding collaboration and overlap with his group and the OpenClinical initiative.
6) Clustering with FP7 ICT project MyHealthAvatar during the Consortium Meeting in Warsaw, 1st April, 2014 (agenda item #27)
7) Clustering with Lithuanian eHealth Projects Coordination Board KTU team member Arunas Lukosevicius - a member of eHealth Projects Coordination Board at Lithuanian Ministry of Health (MoH) at the meeting of the Board in Vilnius 26 June 2014 presented the CARRE project. For Board members consisting of main Lithuanian health care institutions and reseach organizations as well as for MoH officials. Board expressed an interest to integrate the project results into the Lithuanian eHealth and health care systems as a tool for the preventive medicine. It was pointed out that CARRE concept and expected results are very much in line with the Lithuanian health care reform provided by MoH and its direction towards management of costly chronic diseases by means of modern ICT and biomedical engineering technologies.
8) VULSK team member Laurynas Rimševičius attended 12th Conference of Baltic Societies of Nephrology, in Dubingiai, 12-14 Aug, 2014. Had a discussion on the concepts and approach of CARRE project.
9) Clustering with FP7 ICT project MyHealthAvatar (http://www.myhealthavatar.eu/) during the Consortium Meeting in Vilnius, 23 September, 2014 (agenda item #12)
10) Clustering with the EU funded project ICTforHealth (http://www.ictforhealth.net/ and https://vivaport.eu/) during the Consortium Meeting in Vilnius, 23 September, 2014 (agenda item #13)
11) Clustering with FP7 ICT project DrInventor (http://drinventor.eu/) during the Consortium Meeting in Vilnius, 23 September, 2014 (agenda item #15)

12) Participation and attendance in the critical data Hackathlon, that took place in London (6-7 Sept 2014). During this event, George Gkotsis (OU) engaged into discussions concerning the CARRE project. http://www.eventbrite.co.uk/e/london-critical-data-marathon-6-7-sept-2014-tickets-12028336077

13) Enjie Liu (BED) gave a presentation about CARRE project titled: Personalized patient empowerment and shared decision support for cardiorenal disease and comorbidities (CARRE), in the Strategic Board at Luton Clinical Commission Group, UK, 25 September 2014.

14) KTU team members participated in the event "20-th Anniversary Celebration Conference (20th ACC) of Estonian Society for Biomedical Engineering and Medical Physics (ESBME&MP), and Department of Biomedical Engineering (DBME)", Technomedicum, Tallinn University of Technology, Estonia, 2-3.10.2014. Meeting and discussion with CARRE Associate Partner Prof. Ivo Fridolin.

15) PIAP team members had preliminary discussions regarding collaboration and expertise involvement in visualisation and decision support domain with medical members of Institute of Metrology and Biomedical Engineering - Faculty of Mechatronics in Warsaw University of Technology.

Custering activities during the 2nd project year

16) Clustering with the KMi's "Quantified Lab" project, involving input from EU-funded projects MK:Smart, DecarboNet and COMPOSE, coordinated by John Domingue (OU). The project is investigating applying "Quantified Self" principles to an academic lab, by monitoring participants' activity, use of local resources, energy, carbon footprint and physical environment. Meetings took took place on 4th Nov 2014 and 28th Sep 2015.

17) VULSK team member Gintarė Juozalėnaitė attended the event organized by The Lithuanian society of cardiology, 25 Nov 2014. Discussion with the members about CARRE project goals, cardiorenal syndrome, patients with CRS monitoring was held.

18) VULSK team member Gintarė Juozalėnaitė attended the congress, The Arterial Hypertension News (2015), on 16 Apr 2015 in Vilnius, Lithuania. Discussion on CARRE project, cardiorenal syndrome, patients with CRS and hypertension, monitoring, 24hs BP monitoring, home treatment and disease management.

19) VULSK team member Laurynas Rimševičius attended the conference "Complement mediated diseases in nephrology" in Vilnius, 30 Apr, 2015 and had a discussion with national medical experts about employing CARRE in patients with glomerulopathies.

20) Poster and demonstration sessions at "Knowledge Media@20", (20th May 2015) celebrations of the 20th anniversary of the Knowledge Media Institute at the OU, where Allan Third (OU) engaged in discussions concerning the CARRE project with external guests. http://kmi.open.ac.uk/20/

21) VULSK team member Laurynas Rimševičius attended ERA-EDTA 52nd Congress in London, on 28-31 May, 2015. Had a discussion about CARRE goals and possibilities to monitor cardiorenal patients with CKD at home.

22) VULSK team member Gintarė Juozalėnaitė attended the symposium "Echocardiography Today and Tomorrow" (June 20-26, 2015), St.Wolfgang Austria. Discussed with other participants about cardiorenal syndrome, the echocardiographic pattern of CRS patients (LVH, EF) and the goals and approach of the CARRE project.

23) The OU team contributed significantly to the European Semantic Web Conference annual summer school (31st Aug – 5th Sep 2015) in Kalamaki, Greece, including supervision of student projects using anonymised sensor data extracts from CARRE project members. http://summerschool2015.eswc-conferences.org

24) VULSK team member Gintarė Juozalėnaitė took part in the congress, the 1st conference, progress of ECMO in Lithuania, on 11 Sep 2015, in Druskininkai, Lithuania. Discussion on cardiorenal syndrome type 1, 3, end-stage patients and ECMO possibilities was held with conference participants, and discussion on the approach of CARRE project for empowering the cardiorenal patient to prevent and manage the disease at home.

25) Clustering with the project eCP, Presentation and discussion on Electronic Clinical Protocol ontology and social network: experiences with a logical expression builder, CARRE #05 project consortium meeting, Kaunas, 24-25 September, 2015

26) Clustering with ELINTA Companies Group presentation on potential collaborations and clustering, CARRE #05 project consortium meeting, Kaunas, 24-25 September, 2015

27) Clustering with Mobile Data Secured Ltd, CARRE #05 project consortium meeting, Kaunas, 24-25 September, 2015

28) VULSK team member Laurynas Rimševičius attended 12th European Peritoneal Dialysis Meeting in Kraków, on 2-5 Oct, 2015. Had a discussion about possible monitoring of patients with ESRD and renal replacement therapy with CARRE service.

Clustering activities during the 3rd project year

29) CARRE project was presented at the European Project Space in the 9th International Conference on Health Informatics (HealthInf 2016), part of BIOSTEC, Rome, Italy, 21-23 Feb. 2016. The project attracted the interest of several attending parties and there were follow-up discussions and clustering with several of them. Notable clusterings include:

   - Clustering with the team of Prof. H. Afsarmanesh, University of Amsterdam (Federated Collaborative Networks Group, Informatics Institute, Computer Science Dept.): the concept of CARRE project was discussed in detail and gave insight to the PhD research of Mr. M. Shafahi (PhD student under the supervision of Prof. Afsarmanesh). This research looks into medical literature retrieval based on medical concepts in the area of diabetes. CARRE medical evidence aggregators were discussed as well as the concept of semantically described and linked risk factor data

   - Clustering with the team of Luxembourg Institute of Science and Technology (LIST), Andreas Arens and Marcos Da Silveira, who have developed the Wikifood online service (www.wikifood.lu). The clustering discussed possible ways to include the information on wikifood in the CARRE decision support services, and thus extend the lifestyle empowerment beyond the scope of the CARRE project. This discussion led to mutual interest for appropriate research proposals to fund the development of this idea.

30) Clustering with WiMBE IFMBE during the special WiMBE session at the 14th Mediterranean Conference on Medical and Biological Engineering and Computing (MEDICON 2016), Paphos, Cyprus, 31 Mar. – 2 Apr. 2016. CARRE Coordinator presented the case of CARRE project as gender balanced ICT project.

31) CARRE project results were presented at the accompanying exhibition of the 3rd International Forum Life Sciences Baltics 2016 (LSB 2016), Vilnius, Lithuania, 14-15 Sep. 2016. The KTU team demonstrated CARRE multiparametric scale in live and engaged in discussions with conference and exhibition participants. http://www.lsb2016.com/.

32) Clustering with Prof. Eugenijus Kaniusas, Institute of Electrodynamics, Microwave and Circuit Engineering, Vienna University of Technology. Prof. Kaniusas is a member of CARRE External Experts Advisory Board and was invited to attend and advice on the project (exploitation) during the final project meeting in Vilnius 15-16 September 2016. During this meeting, Prof. Kaniusas presented the work of their university research team and a respective spin-off company, discussing also their know-how and best practices on how to exploit research results via spin-off companies. The clustering also included a discussion on how to combine the concept of CARRE sensors and risk prediction model with their work on stimulation of parasympathetic nervous system on a research proposal for upcoming H2020 calls.

33) KTU members participated in clustering with KTU National Innovation snd Enterpreneurship Centre (NIEC) http://nivc.ktu.edu/en.htm and had a discussion 22 Sep 2016 on CARRE project results expoitation creating innovations and possible commercialization within Lithuanian R&D valley “Santaka”, KTU startup space, associated companies and NIEC partners.

34) VULSK team member Laurynas Rimševičius attended 5th Vilnius-Gdansk Meeting on Hypertension, Kidney Disease and Cardiovascular Protection in Gdansk, 2016, September 23, 2016. Had a disscussion about Carre pilot study with cardiologists, nephrologists and endocrinologists

35) VULSK team members Domantas Stundys and Neringa Bileišienė attended the Executive and Politic strategic Board meeting of “eHealth for Regions” meeting, held on the 19th of October 2016. During the meeting a general concept of CARRE platform and preliminary findings were discussed. The members of “eHealth for Regions” were also invited to join CARRE as associated partners.

36) The project was demonstrated in the eHealth Forum 2016: “eHealth: Catalyst for reform – Enabler for growth”, Megaron, Athens, 25-26 October 2016. The eHealth Forum connects European stakeholders with those from the Balkans, South East Mediterranean and the Middle East and provide the grounds to reach and network with key leaders and policy makers. http://www.ehealthforum.org

The project was part of the HL7 booth, via clustering activities with this major standardization body in medical informatics and hospital information systems. During this event, there were several clustering activities with other projects and partner representatives for the uptake and exploitation of CARRE project results. In particular:

- Municipality of Peristeri, Attiki, Greece, http://www.peristeri.gr
  Contact person: Christina Konstantakopoulou
  Scope: uptake of CARRE service for the municipality’s citizens
- Association of Hellenic Military Navy Veteran Officers, Coast Guard Officers and Friends with Heart Disease, [Ένωση Καρδιοπαθών Αξιωματικών Πολεμικού Ναυτικού ε.α. – Λιμενικού Σώματος και Φίλων], Athens, Greece, Tel. +302103368569, http://www.kardiamou.gr,
  Contact person: Stauros Terzakis
  Scope: uptake of CARRE service for the members of the association
- Blueline, London, United Kingdom, http://www.bluelinemed.com/
  Contact person: Nikos Naoum
  Scope: uptake of project results for customers
- Guy’s and St Thomas’ NHS Foundation Trust, London, United Kingdom, http://www.guysandstthomas.nhs.uk
  Contact person: Efstathios Theocharidis
  Scope: collaboration for further research and uptake of project results
- Bering Limited, London, UK http://beringresearch.com
  Contact person: Chrysanthi Ainali
  Scope: commercial exploitation of project results
- Artica Telemedicina, Madrid, Spain, http://www.articatelemedicina.com
  Contact person: Alejandro Sánchez-Rico
  Scope: commercial exploitation of project results, collaboration for further research
- IBM Ireland Research Lab, Dublin, Ireland, https://www-01.ibm.com/software/ie/irelandlab/
  Contact person: Spyros Kotoulas
  Scope: commercial exploitation of project results, uptake of privacy dy design research
- University of Thessaly, Lamia, Greece, http://www.uth.gr
  Contact person: Prof. Dimitris Iakovidis
  Scope: further research collaboration, semantic technologies and decision support in eHealth
- Foundation for Research and Technology, Heraklion, Crete, Greece, https://www.forth.gr
  Contact person: Dr. Kostas Marias
  Scope: clustering of ehealth empowering projects (iManageCancer project)

2. Associated Partners

During the course of the project, CARRE has achieved to attract and include ten (10) more Associated Partners who have given invaluable insights during the research and development phases of the project and, most importantly, have explicitly expressed interest to exploit commercially project outcomes (mainly sensors and the risk factor database) or uptake the CARRE service for routine deployment in healthcare practice.

In summary, CARRE associated partners include a non-profit medical research organization on lifestyle medicine, a technical university, four SMEs with activities in the area of sensors and medical IT solutions, one large telecommunications enterprise and three healthcare providers. CARRE associated partners are summarized in Table 1, the following sections present a synopsis of their profile and their role in CARRE project.

Table 1. CARRE associated partners.

no.	Partner Full Name	Country	Type	Area of expertise
1.	European Lifestyle Medicine Organization (ELMO)	Switzerland	Non-profit, medical research organization	Medical research and dissemination
2.	Tallinn University of Technology (TUT)	Estonia	University	Biomedical sensors
3.	PRISMA Electronics SA (PRISMA)	Greece	SME	Sensors & microelectronics
4.	InPeak	Lithuania	SME	Visual analytics, sports informatics, decision making
5.	Softneta UAB (SOFTNETA)	Lithuania	SME	Health informatics solutions
6.	GRAINA Medical Solutions (GRAINA)	Lithuania	SME	Medical IT solutions
7.	AB Omnitel (OMNITEL)	Lithuania	Large enterprise	Telecommunications
8.	Lithuanian University of Health Sciences, Hospital of Lithuanian University of Health Sciences Kauno klinikos (Kaunoklinikos)	Lithuania	University Hospital	Healthcare provider
9.	Public District Primary Health Care Center, Poliklinikinis Skyrius (VšĮ Telšių r. PSPC)	Lithuania	Primary Health Care Centre	Healthcare provider
10.	Madona District Municipality Primary Health Care Center (VšĮ Anykščių ANYKPSPC)	Lithuania	Primary Health Care Centre	Healthcare provider

2.1. ELMO

Full name: European Lifestyle Medicine Organization

Country: Switzerland

Website: https://eulm.org/

Type: Non-profit, medical research organization

Contact: Dr. I. Arkadianos, MD, Vice-president

2.1.1. ELMO Profile

The European Lifestyle Medicine Organization (ELMO) provides leadership in research, prevention and treatment of lifestyle-related diseases through nutrition, physical activity, psychology and public health. Chronic Diseases such as Cancer, Cardiovascular Diseases, Diabetes and Chronic Lung Diseases, as well as an ever increasing amount of mental disorders are taking their toll worldwide. The WHO sees these disorders as an absolute priority. ELMO promotes Evidenced Based Medicine and represents from now on the Lifestyle Medicine movement in Europe. ELMO is a founding member of “Lifestyle Medicine Global” an international Organization, “umbrella” for all Lifestyle Medicine communities around the world. ELMO is a non-profit, non-political, non-religious scientific and medical organization.

2.1.2. ELMO Role in CARRE

ELMO connects medical doctors, researchers, NGOs and patients in lifestyle and technology questions in chronic diseases treatment and prevention. ELMO provides experience, know-how and expertise on the effective use of technology in medical practice, hospital settings and patient life to prevent and treat chronic diseases. Lifestyle changes are a key goal in patient empowerment; ELMO can provide essential knowledge as the biggest Lifestyle Medicine Society in Europe. A strong understanding of the role of lifestyle factors in cardio-renal diseases is needed for the CARRE project.

ELMO is working on models for improved understanding of chronic disease progression pathways and comorbidities trajectories (‘Health Continuum’) and their dynamics with focus on lifestyle factors. The collaboration with CARRE project has improved knowledge and gave feedback for the development of effective technologies to prevent and manage cardio-renal diseases and other chronic diseases.

2.2. TUT

Full name: Tallinn University of Technology

Country: Estonia

Website: http://www.ttu.ee/

Type: University, Dept. of Biomedical Engineering

Contact: Prof. I. Fridolin, Director

2.2.1. TUT profile

The Department of Biomedical Engineering (DBME), in Technomedicum, Tallinn University of Technology, was created on January 23rd 2007 from the former Biomedical Engineering Centre (established in 1994) in order to concentrate the efforts of research and education in Biomedical Engineering (BME) and related areas. DBME is a structural unit of Technomedicum, Tallinn University of Technology. The director of DBME is Prof. Ivo Fridolin. DBME carries out an active research in the field of BME and belongs to an Estonian Centre of Excellence - Centre for Integrated Electronic Systems and Biomedical Engineering (CEBE).

One main research topics of DBME is biofluid optics and bio-optical monitoring, which is carried out by Biofluid Optics (BFO) group (leader Prof. Ivo Fridolin). The research of members in BFO group proposed an optical method for the on-line HD monitoring by using optical signal of biological fluid (spent dialysate), enabling optical determination of Kt/V for urea firstly in the world. The implementation studies during technology transfer led to a novel successful commercial technology - integrated HD dose monitor - Option Adimea (BBraun Avitum AG). The sensor is manufactured by an Estonian SME, demonstrating the high potential of the optical signals for monitoring dialysis treatment on-line. Currently, the BFOs research is ongoing towards a new concept - a new multicomponent dialysis monitor.

2.2.2. TUT role in CARRE

Optics of biofluids adds new knowledge about monitoring clinical treatments and diagnosing of various disorders and offer potential for higher quality and personalised treatment with earlier diagnosis. The unique interdisciplinary competence of the BFO research group in the fields of biooptics, chromatography, biochemistry, signal analysis, and optical engineering and medicine allows to create a synergy for generating original ideas in the cutting edge of interdisciplinary research and innovative solutions for developing technology for in-vitro cardiorenal marker diagnostics and monitoring. TUT group has a state-of-the-art HPLC and MS/MS-TOF apparatus, which permits, in combination with existing spectrophotometrical and spectrofluorometrical equipment, to find and identify new markers, applicable for simple optical diagnosis and monitoring for early diagnostics and prevention of cardiorenal complications.

The expected outcome with CARRE collaboration is to improve the performance of diagnosis, and prediction, in hand by hand with personalised intervention having a significant impact on clinical decisions and health outcomes. The overall and wider ambition is to support patients' knowledge about the importance of intervention programmes, change of life-style and its positive impact through personalized patient empowerment with the help of the optical diagnostic tools in preventing and reducing severe comorbid health risks related to cardiorenal complications.

2.3. PRISMA

Full name: PRISMA Electronics SA

Country: Greece

Website: http://www.prismaelectronics.eu/

Type: SME, sensors & microelectronics

Contact: Ms. A. Soukoulia, EU R&D Projects Manager

2.3.1. PRISMA profile

Established in 1991 in Alexandroupolis, Greece, PRISMA is considered a leading company in electronics design & manufacturing with a heavy involvement in research and development activities. The Company participated in 34 R&D national and European projects during the last 15 years. PRISMA promotes its innovative products and services in remote sensing, worldwide. It is a member of the Greek Mi-Cluster (microelectronics) and si-Cluster (space). PRISMA Electronics is an official manufacturer of CERN ESA and Airbus.

2.3.2. PRISMA role in CARRE

Having an important participation role in R&D projects, Prisma has become part of a worldwide network of companies and organizations that strive for innovation and excellence. Prisma will share the CARRE results within its network which consists of a large number and of high quality of partners from academia and research community as well as from enterprises.

The collaboration in the project will allow Prisma to further experiment with the results and develop ideas that could be combined with its corporate products in the field of IoT and Wireless Sensor Networks and that will fit the needs of its clientele. Prisma will exploit the experience gained by the project in future projects and collaborations.

2.4. InPeak

Full name: inPeak

Country: Lithuania

Website: http://www.inpeak.io/

Type: SME, visual analytics, sports informatics, decision making

Contact: Mr. M. Krisciunas, Co-founder

2.4.1. InPeak profile

inPeak is a software platform that is carefully listening to what the body is "telling" (biometric data) and reporting in a convenient way. This platform is dedicated to pro-athletes, sports medicine doctors, scientists and coaches. inPeak consolidates health data that athlete generates (wearable devices, health checks, benchmark results, competition records...) combine it with subjective factors (mood, motivation, sleep quality, etc.) and provide a visual output to "hear" and understand what the body is saying. This prevents burn outs, injuries and can potentially extend career.

2.4.2. InPeak role in CARRE

InPeak collaborates with CARRE for the validation and exploitation of developed CARRE sensors and devices in professional sports domain. The expected outcome of this collaboration is commercially viable wearable sensors that collect biometric data and their full integration into InPeak's software platform. Additionally, the company will continue research and development efforts of new biometric data and sensors in collaboration with CARRE and CARRE partners.

2.5. SOFTNETA

Full name: Softneta UAB

Country: Lithuania

Website: http://www.softneta.com/

Type: SME, health informatics solutions

Contact: Ms. R. Siauruseviciute, Office Administrator

2.5.1. Softneta profile

Softneta is an award winning Lithuanian IT company providing software-based specialized health care solutions to improve the quality of patient care. Since the establishment in 2007, Softneta has a great success not even national wise but also worldwide while exporting the products to North and South America, Continental Europe, Middle East Countries Australia etc.

2.5.2. Softneta role in CARRE

SOFTNETA expects to uptake CARRE research results and further advance them towards commercial exploitation.

2.6. GRAINA

Full name: GRAINA Medical Solutions
Country: Lithuania
Website: http://www.graina.lt/
Type: SME, medical IT solutions
Contact: Mr. A. Padvariskis, General Manager

2.6.1. GRAINA profile

GRIANA is offering state-of-the-art IT medical solutions for health care facilities for many health care institutions in the region. Its nearest plans are to enhance development and application of innovations in diagnostics, monitoring and enabling technologies for patients. The company is interested in potential of semantic interlinking of heterogeneous data to construct dynamic personalized models of complex comorbid medical conditions with disease progression pathways and comorbidity trajectories since this opens a possibility to develop new services and products for patients having health risks and chronic conditions. The company is also interested in advanced wireless unobtrusive sensors – wristwatch type for continuous health state monitoring and smart scales for intermittent evaluation of important physiological parameters. One could forecast a good potential of those solutions for the market of medical devices.

2.6.2. GRAINA role in CARRE

GRAINA Medical Solutions has confirmed their interest to collaborate with CARRE partners in the phase of project result exploitation and dissemination. The company has acquired experience, high quality of services and prompt reaction to the needs of the consumers. In 2007 the company installed the quality management system ISO 9001:2000 certified by UAB DET NORSKE VERITAS. Currently GRAINA Medical Solutions is boosting innovation activities. Therefore collaboration with EU FP7 project CARRE partners in exploitation of advanced project results has a high importance to the business plans of the company.

2.7. Omnitel

Full name: AB Omnitel

Country: Lithuania

Website: http://www.omnitel.lt

Type: Large enterprise, telecommunications

Contact: Ms. A. Balniene, Sales Manager

2.7.1. Omnitel profile

Omnitel, a member of Telia Company group, is one of the largest telecommunication companies in the Baltic States.

2.7.2. Omnitel role in CARRE

Omnitel actively supports the project as it advances patient empowerment and disease management via telecommunications. Omnitel has donated routers for the deployment of the Lithuanian CARRE pilot and also has actively engaged in the dissemination of project results via press releases and a press conference event in Vilnius (Sep 2016).

2.8. Kauno Klinikos

Full name: Lithuanian University of Health Sciences, Hospital of Lithuanian University of Health Sciences Kauno klinikos

Country: Lithuania

Website: http://www.kaunoklinikos.lt

Type: University Hospital

Contact: Prof. B.I. Arune, Head of Nephrology Dept.

2.8.1. Kauno Klinikos profile

The Nephrological Clinic of Lithuanian University of Health Sciences was established in 1992. Since then it became one of the most progressive nephrological centers in Baltic countries providing full service for nephrological patients: clinical nephrology, hemodialysis, peritoneal dialysis and kidney transplantation. Sub departments of clinical toxicology and therapeutic apheresis are included into the structure of Clinic, also. More than 1000 patients per year are treated in the Nephrological department, more than 16 000 haemodialysis procedures and about 40 kidney transplantations are performed every year. In outpatient department approximately 1400 consultations by nephrologists are done every year. The Nephrological Clinic has a good clinical basis. For this reason it carries significant academic and scientific work. Pedagogic staff of Clinic consists of 3 professors, 3 associate professors, 3 lectors and 5 assistants. Since 2000, 8 PhD dissertations have been defended. Neprological Clinic conducts the module “Kidney and urinary tract pathology, clinical toxicology” (ECTS 6) for the 5th year medical students. 38 physicians graduated residency of nephrology and 6 physicians graduated residency of clinical toxicology since 1996. Postgraduate studies for internal, nephrology and toxicology fellows, CME for internists and nephrologists are carried out. We participate in multicenter clinical trials. At the meantime researches of our department concentrate on the main 6 research topics, including vascular calcification and volemia evaluation in patients with chronic kidney disease. The Nephrological Clinic is an active participant of Renal Sister Centres (RSC) program of International Society of Nephrology. During 15 years of collaboration Ghent University (Belgium) supported the progress of nephrology in Kaunas. More than 20 conferences with famous international speakers were organized by our Clinic, 26 doctors visited Ghent University hospital during this program. In 2010 Nephrological Clinic became supervisor of RSC program for the Brest (Belorussia) Nephrological Centre.

2.8.2. Kauno Klinikos role in CARRE

Kaunoklinikos is expected to contribute in validation of developed devices and systems that are used for early diagnostics and prediction of complications of renal replacement therapy, detection and treatment of life threatening comorbidities in the patients with acute and chronic renal failure. Given that cardiovascular disorders are the main cause of mortality of the patients with chronic kidney disease, the synergy of engineering and clinical practice is expected to improve survival and quality of life of these patients. This can be achieved by controlling severe comorbidities and ensuring greater security of the equipment used in renal replacement therapy (hemodialysis), personalizing treatment for individual patient.

2.9. Telšiai District Primary Health Care Center (PSPC)

Full name: Public Institution Telšiai District Primary Health Care Center, Department of Polyclinic

Country: Lithuania

Website: http://www.tpoliklinika.lt

Type: Primary health care service provider

Contact: Dr. A. Gudauskas, Office Manager

2.9.1. Telšiai District Primary Health Care Center profile

Telšiai District Primary Health Care Center provides primary health care services with advanced science and technology-based, secure, high-quality, consistent with the needs of patients; proper use of available resources, according to the founder, partners and customers service requirements; ensures patient privacy, respect and human dignity; performs medical science advances and new deploys technologies; actively participates in social and health strengthening and training.

2.9.2. Telšiai District Primary Health Care Center role in CARRE

Telšiai District Primary Health Care Center is expected to contribute in validation of developed CARRE service and uptake the service for the prevention and management of metabolic syndrome and chronic renal and heart disease for its patients.

2.10. Anykščiai District Municipality Primary Health Care Center (ANYKPSPC)

Full name: Public Institution Anykščiai District Municipality Primary Health Care Centre

Country: Lithuania

Website: http://www.anykpspc.lt/

Type: Primary health care service provider

Contact: Ms. A. Trescenko – Blauzdiene, Family Doctor

2.10.1. Anykščiai District Municipality Primary Health Care Centre profile

Public Institution Anykščiai District Municipality Primary Health Care Centre provides licensed health care services: family medicine, internal medicine, childhood disease, surgery, obstetrics and gynecology, dentistry, a dentist's assistant practice, practice nursing, child development disorders in early rehabilitation, laboratory diagnostics, ambulance, nursing and supportive care services. An institution is insured by compulsory civil liability insurance for damage caused to patients.

2.10.2. Anykščiai District Municipality Primary Health Care Centre role in CARRE

Anykščiai District Municipality Primary Health Care Centre is expected to contribute in validation of developed CARRE service and uptake the service for the prevention and management of metabolic syndrome and chronic renal and heart disease for its patients.