

## Partner profile from the Region of Southern Denmark

*(HORIZON: Palliative and end-of-life care for non-cancer patients)*

### A Danish “ecosystem” for Horizon Europe collaboration

The Region of Southern Denmark is one of five administrative public units in Denmark. The Region of Southern Denmark (RSD) operates the healthcare service in Southern Denmark. The Region covers many functions including five main hospital units with a large focus on innovation and digitalisation in health and social care. The Regional Digitalisation Strategy states that all citizens and patients have the right to and must have equal opportunity for digital contact with the healthcare system. In accordance with this strategy, the region actively develops and disseminates digital solutions to give patients a better overview of their own patient journey and offer better opportunities for e.g. video consultation and self-booking.

RSD has a unique ecosystem for development, testing and evaluation of innovative healthcare solutions, consolidated through the patient@home project and the regional ecosystem’s EIP on AHA engagement. The ecosystem is acknowledged as a four-star reference site in the EIP on AHA. The coalition consists of a long list of quadruple helix partners with a strong history of close collaboration. The ecosystem is also an active member of the European Connected Health Alliance and CORAL network.

RSD has a vast experience in participating in national and EU projects solving cross-border health challenges with a focus on health innovation. This includes Mastermind (making treatment for depression more widely available for people in rural areas using cCBT and video conference); ACT@Scale (scaling video consultations with a specific focus on relatives of haematology patients); DREAMING (testing home monitoring solutions to measure vital and environmental factors in the home of older citizens with chronic conditions). The Region has participated in Interreg collaborations such as ACCESS & ACCELERATION focusing on overcoming barriers in development of innovative health technology, and ProVaHealth – Proof and Validation in Health, which stimulated cooperation among health laboratories in the Baltic Sea region and tested new technologies in real-life contexts. The region is also an affiliated partner in JADECARE, a Joint Action on integrated care, where RSD participates as one of four selected best practices across Europe with our “Digital Roadmap for Integrated Healthcare Services”, to be adopted by eight other European Regions.

The Region is highly dedicated to delivering transformation in health and care and have put in place several policies and strategies and shaped the organisation optimally to achieve this. The technological and financial foundations are in place to support this transformation. The Region has a longstanding agreement between the region, municipalities and GPs to improve the services for the increasing number of people with chronic conditions, aiming to improve their quality of life, whilst using our resources optimally, based on the LEON principle (Lowest Efficient Cost Level).

Since 2017, the Region has had an Innovation Strategy coordinating the direction of the joint innovation efforts in the region, focusing on the use of innovation to improve health and care services for the citizens of the region. In 2021, the Region developed its first Strategy for Digital Psychiatry to underline the importance and commitment for using digital solutions in both somatic and mental health services.

Denmark as a country has a long tradition in development and implementation of eHealth and is internationally recognized as a frontrunner in digitalisation of the health domain by having a mature infrastructure, very high level of digitalization and information exchange across all sectors and actors.

International collaboration, incl. European projects has had a high priority in many years. Engaging, innovating and learning with different stakeholders in the health and IT domain is how we improve and prepare for the future for the benefit of Danish citizens/patients, health professionals, industry, researchers, authorities etc.

All the organisations in the Southern Denmark Eco-system share an ambition to drive eHealth forward in Denmark and to work with likeminded organisations around Europe. We complement each other's competences and specialties well and uniquely and can jointly provide a strong platform for collaboration with a Danish network. Collectively, we have +30 years' experience in participating in European funded projects across different programmes and domains.

### Our Aim in International Collaborations

Our aim is to enter into collaborations that on the one hand develop new, needs-based and valuable solutions for our regional healthcare services, and on the other hand support knowledge sharing and upscaling of strong and innovative solutions.

From international collaborations within healthcare innovation, we would like to learn more about future possibilities and developments within digitalisation, use of emerging technology and the methods for supporting the professionals in healthcare. We are also very interested in learning more about the different aspects on successfully implementing workflows and technology in healthcare.

### Project content pitch

Palliation is still a sensitive topic even within healthcare and for new professionals it can be a difficult area to enter. We propose that the projects has an element that incorporates virtual training for palliation, where both doctors and nurses can practice in a safe space. The purpose is also to create awareness on the important topic of palliation so that it is prioritized in the care for patients. The development of a game-driven virtual universe with elements concerning palliative care, such as communication with patients, relatives and co-workers or how to refer patients to specific services is a key part of the project idea. This digital solution will function as a virtual training course for the pilot site care professionals. The purpose of the training is to make sure that the care staff feels informed and ready to offer palliative care on the same level as other treatment possibilities. A part of the project would also be to have a joint definition of palliative care and the elements, such as communication, medicine and other tools – with the possibility to include local variations in the pilot sites.

For patients involved in the pilot interventions the project will mean that there palliative needs are perhaps identified earlier and handled either at the hospital or in a home environment across diagnosis. The purpose is also to ensure that the patients' needs are met no matter if the healthcare professional is new or a doctor or nurse. It will also strengthen the collaboration between units and roles so that we have the same language and tools to deploy.

The game is meant only for the healthcare professionals to learn to identify patients with a need for palliative care. They will also gain an understanding for the perspectives of other healthcare professions across sectors. The game will engage the participants in knowledge sharing when they have to discuss typical dilemmas in care and treatment of patients with palliative needs.

The point of using a game is to make palliative care more accessible and fun to learn, as it is a hard subject for healthcare professionals to learn and practice. Making it a web-based game allows many people to access it at the same time and to revisit it when needed. The long-term goals would be a higher patient satisfaction rate, where palliative care needs are identified and met at an earlier stage no matter what professional they meet. Also an expected rise in workforce satisfaction rates as they feel more safe and competent in the palliative care areas.

On the shorter term the goals would be:

- To develop a joint definition of the core principles of the palliative care with the participation from relevant healthcare professionals and representatives of patients/relatives
- The development of a digital game universe to support both the individual and shared development of competencies within palliative care
- That pilot sites test the game and in the process develop the competencies of their nurses and doctors in select departments
- That healthcare staff in the pilot sites feel better equipped to see and initiate palliative care
- That there is a generic model for the development and implementation of a virtual game universe to support training of palliative care competencies so that the results can be scaled

We can offer a complimentary flexible Southern Danish founded ecosystem, which is able to contribute to a consortium with a range of skills and which includes the possibility to have both technological, piloting and supportive specialist roles in a consortium. The joint experience also covers coordination, WP and task leader functions in H2020, local pilot site lead as well as specialist roles. The specific partners for this call are introduced below in later sections.

### Potential Partner Roles

The Region of Southern Denmark can be a work package leader or a partner in this call with a focus on digital competencies for healthcare professionals within palliative care. This could include, but not limited to, areas such as:

- Work package leaders or co-leaders
- Pilot site participation
- Co-creation workshops and methods for developing the virtual game
- Proto-type for the digital universe and content elements

## About the Health Innovation Centre

As the central innovation unit in the Region of Southern Denmark, the Health Innovation Centre's purpose is to support the regional hospitals and psychiatric care units in their local innovation efforts, across the whole innovation process from idea to implementation and evaluation. Our mission is to *"co-create solutions for the future healthcare sector"*.

The Centre has a significant role in supporting public-private innovation partnerships in the region, including establishing links and building bridges between needs in the clinical operations and companies who develop new robotics solutions for healthcare. The Health Innovation Centre offers unique insights into the challenges and needs within the healthcare sector and supports innovation processes that result in valuable solutions that improve healthcare services, to the benefit of citizens, employees and the healthcare sector.

The Health Innovation Centre has a strong team of around 65 employees with a wide range of skills to support innovation and co-creation processes. We have a mixture of specialist skills within specific areas such as robotics in healthcare, to broader methodological competencies in relation to innovation management, participatory design, anthropological observation and understanding of human robot interactions.

Through a strong focus on cross-disciplinary collaboration, user involvement and design thinking the Health Innovation Centre of Southern Denmark develops innovative solutions that contribute to high quality healthcare for citizens and efficient services and procedures for healthcare professionals. Our innovation field explores new ways of designing hospitals, improving telehealth and telecare solutions, and supporting daily operations in and around the Region's hospital units, e.g. through the use of emerging technologies such as AI and robotics.

The centre employs coproduction and co-creation as a method to involve users as co-creators of solutions. Involving users – patients, citizens, and employees – is at the core of the Health Innovation Centre of Southern Denmark, e.g. through a specialisation in needs analyses, user qualification/testing of new technologies and services as well as implementation. At its core is close collaboration with public health and care organisations and private companies as well as knowledge- and educational institutes such as the University of Southern Denmark. The main aims are to bring integrated care to the citizens of the Region as well as being a meeting point and an accelerator for public and private innovation partnerships.

At the Health Innovation Centre of Southern Denmark we co-create solutions for the future healthcare sector. Innovation, to us, means changes that work in everyday life. Innovation is the process from demand to implementation. Our solutions are productive and contribute to a measurable effect in somatic and psychiatric hospitals, social institutions and regional companies. Our characteristics are:

- We create innovative solutions for clinicians' everyday life
- We create innovative solutions, that support citizens' own coping skills
- We deploy innovation in public and private co-operations
- We focus on user-centered design and prototyping

The Centre collaborates with Danish Life Science Cluster to host thematic open ecosystem events e.g. “Skills for Health” in South Denmark within the ECHAlliance network. As shared research- and innovation centers between the University of Southern Denmark and Odense University Hospital, CIMT, CAI-X and CCR contribute to sharing knowledge between research and clinical practice.

### Relevant projects

**DELIVER** – is an Erasmus+ project to advance digital skills for health care professionals, acknowledging that healthcare professionals are at the core of digital transformation in health and the further use of ICT. The project builds upon the learnings from SDSI’s national project “Becoming digitally competent”. DELIVERs objective is to provide a curriculum for training courses as well as learning material for ongoing professional development beyond the duration of the educational program. The generic educational program will include components that can be tailored to various local contexts and secure optimal relevance for all partners and for the transferability of the project to other EU countries. Each country will provide test courses for the target groups. The learning outcomes of the educational program will be regulated as part of the European Qualifications Framework (EQF). To meet the current demand for enhancing HCPs and HCMs digital health skills, the educational program will be a post-graduate digital skills educational program for HCPs and HCMs. The educational program can potentially be incorporated into BSc of Nursing Studies, BSc of Physiotherapy etc. throughout the European region.

One of our other initiatives is a course for healthcare professionals on how to interact with patients through digital tools as these are becoming more and more widespread and in demand by citizens. This means that the health professionals need to feel comfortable in using digital tools themselves, be able to solve simple technical issues and adapt their communication from personal to virtual interaction. **“Increase your Digital Skills”** ([“Bliv digital kompetent”](#) ) will strengthen the healthcare staff’s digital competencies and increase their technological literacy, use of digital technologies and communication with citizens through digitally supported treatment, care and rehabilitation. The purpose is for the healthcare staff to be able to support citizens in self-care.

### Contact Information

Further information on the Health Innovation Centre of Southern Denmark and our activities can be obtained at [www.innosouth.dk](http://www.innosouth.dk). You can reach us directly on: +45 2964 5884 and [mhs@rsyd.dk](mailto:mhs@rsyd.dk). Our coordinator Maria Hardt Schoennemann will be the primary contact. We are also active on LinkedIn and Twitter!

## About the Odense University Hospital

Odense University Hospital (OUH) is one of four university hospitals in Denmark and covers all medical specialties in healthcare. Furthermore, the hospital has research activities in the majority of medical areas. The hospital is part of the Region of Southern Denmark and is the largest hospital in the area. The hospital covers national function in 16 areas. We treat approximately 100,000 Patients per year and has 1050 beds available. The staff number is approximately 11,300 employees. The mission is *Patient first*. *Patient first* is the underlying principle of OUH's approach and ambition in creating value for our patients. This commitment to our patients includes acting as their university hospital, which we achieve through full implementation of our code of practice. The yearly budget is approximately € 1 billion.

For the time being the hospital is in a process of establishing a new high-tech university hospital in the Odense Area and a reconstruction of the hospital in Svendborg. The hospital site in Odense, which is the largest part of the hospital, will structurally be integrated into the University of Southern Denmark and its new Faculty of Health Sciences. The aim is to benefit patients by positioning research and treatment close to one another, a model found in only a few places around the world. The vision for the new hospital is to qualify and improve patient treatment in modern surroundings, the hospital will be of a high, and modern standard using technologies to improve patient care,

**The department of Gastroenterology and Hepatologi** at Odense University Hospital (OUH) has a long tradition of working with innovation as well as of testing, implementing and assessing new technological solutions. This means that new technologies and innovative initiatives are a regular part of the hospital's daily operations, which constantly improve treatments and workflows at OUH. Innovation has been a key part of OUH for years. For instance, OUH was the first Danish hospital where all 50 clinical wards switched to an electronic patient record back in 2009.

A high degree of digitization, an agile IT infrastructure and an innovative culture are the prerequisites for us at OUH to easily and quickly test and implement new solutions – the basic elements and the digital foundation are in place. The Department of Gastroenterology are pioneering in digital transformation at Odense University Hospital (OUH). The Department of Gastroenterology S, is a special department with a bed unit, endoscopic ward, outpatient department and research center. The approximately 150 members of staff in the department sees to about 65 patients a day in the nursing outpatient department, 80 patients in the doctor-patient clinic and has about 50 patients going through the endoscopic ward daily. Furthermore, the department has over 21 beds at its disposal for hospitalized patients. The department treats medical diseases in the gastrointestinal area as well as the liver, for example esophagus, stomach ulcer, enteritis, complications regarding cirrhosis of the liver, liver inflammation and inflammation of the pancreas. The department sees to patients with the need for highly specialized treatment from all of the Southern Region of Denmark. Besides the operational treatment, the department is the place of the elite research center FLASH, which focuses on liver diseases. FLASH researches new diagnostic methods and correlations between liver damage and diet, intestinal flora, alcohol, diabetes and obesity. The aim of the research is to be able to offer patients with fatty liver disease a more effective treatment in the future and to improve their survival possibilities.

## Relevant projects

**Digital Vision (2019-2021)** was an innovative project with the purpose to create better work procedures and more time for the patients. Digital Vision was innovation and research project, which cleared the way for a systematic approach on digitalization and implementation of innovative technology on the departments of OUH, thereby improve them for New OUH. Digital Vision turns the approach for innovative and digitalization projects upside down and lets a whole hospital ward go through an extensive digital transformation, rather than the usual drop by drop approach which focuses on individual patient groups or technologies at a time.

The nursing staff at the Department for Medical Gastrointestinal Diseases, Department S at Odense University Hospital found that they lack the time, resources and money to give and receive training in a wide range of nursing procedures. It creates insecurity in the individual, challenges patient safety and can result in the staff not having the expected professionalism. In other industries, virtual reality has proven to be a good tool for training and simulating new workflows, procedures, systems and technologies in order to increase the learning yield and ensure a realistic learning experience. The purpose of the project was to test and further develop the prototype **VR Trainer** for virtual simulation of a probe installation in a practical and realistic 3D environment, so that it would correspond exactly with the already very carefully described procedure for probe installation. The project was also to test how VR Trainer can be included as a supplement to training and upskilling of the nursing staff. The project was to increase the professional quality and focus on patient safety, security and uniformity when placing the probe. Nurses with extensive experience and a diverse understanding of technology had to contribute invaluable knowledge in the test course to ensure that the procedure was carried out correctly. They would also bring their experience with communication and patient involvement into play. The user of the VR Trainer are guided through the procedure so that it is performed safely and correctly using feedback from speak and visual aids. VR Trainer was developed based on known mechanisms from digital game development, where elements are used to guide and reward the user when the desired use behavior is achieved. With the VR Trainer, staff would be able to refresh and test the procedure and can fail without consequence. The project is still developing.

**MySkills** is a developing project, and it ensures continuity and systematically in onboarding for new employees and in continuous competence development for permanent employees can be difficult in a busy day at a hospital. After the implementation of the app MyMedCards for coat cards in the Department of Medical Gastrointestinal Diseases at Odense University Hospital, the idea arose for a further development of the project. MySkills can be used on both smartphone and computer and provides electronic access to the department's introductory material. The digital platform entails that the content can be quickly adapted and updated and ensures that new staff are trained in the applicable guidelines and procedures. Another advantage for the employee is that the skills card is linked to your profile, so if you change departments, you can easily document your skills. In 2023 the project will be implemented to the entire hospital staff.

## Contact information

Trine Ladingkaer, Master of clinical nursing. Nursing specialist at the Department of gastroenterology and hepatology, Odense University Hospital. Mail: [Trine.ladingkaer@rsyd.dk](mailto:Trine.ladingkaer@rsyd.dk).