



Reference site application from the Region of Southern Denmark

The reference site is coordinated by the Health Innovation of Southern Denmark.
Up-dated information about the application and the commitments as a reference site can be found at
<https://syddanksundhedsinnovationeipaha.wordpress.com/>

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1. SECTION 1 - ABOUT YOU

1.1 About your organization/institution

Organisation name

The Region of Southern Denmark

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Member State

Denmark

Your organization and core activities

The Region of Southern Denmark is one of five administrative units in Denmark. The Region is among others responsible for health and social care. Which implies the management of hospital and psychiatric services, health insurance, social institutions, general practitioners, and specialists. Furthermore, the Region is responsible for regional development, growth and employment.

Since 2008, the Region of Southern Denmark has had a Smart Specialisation Strategy (S3), which is a strategic approach to economic development through targeted support for research and innovation. The strategy is well in line with the Commission's overall growth strategy, EU 2020. Health and social innovation is one of three focus areas in the region's S3, which falls in line with the focus area of healthy living and active ageing in the European Innovation Partnership. The EIP on AHA activities and commitments are coordinated by the Health Innovation Centre of Southern Denmark. The Centre is the entry to the Region of Southern Denmark when it comes to innovation in the health and social care sector. Established in 2012, the Centre focuses on bringing quality, good working conditions, efficiency and growth to the health and social sector through innovation. This is coordinated in the Region in close corporation with key stakeholders and partners. These are represented in the partnership behind this reference site application.

Region of Southern Denmark is member of the Vanguard Initiative to boost entrepreneurship, innovation and industrial renewal. Those network efforts have also been supported by the Region of Southern Denmark which has been awarded as European Entrepreneurship Region 2013. The Region is part of the Reference Site Collaborative Network and has joined European Connected Health Alliance (ECHAlliance) to support the reference site status of the Region of Southern Denmark.

The EIP on AHA commitment and reference site description as well as progress can be found at the website of the reference site of Region of Southern Denmark <https://syddansksundhedsinnovationeipaha.wordpress.com/>

Geographical coverage

The Region of Southern Denmark covers an area of 12.191 km² and consists of 1 region and 22 municipalities. The municipalities are responsible for prevention and rehabilitation, many of the social services' arrangements and institutions.

The Region of Southern Denmark is the largest workplace in the region, employing around 24,000 people, mainly health care professionals. Measured in turnover, the Region of Southern Denmark is also a true heavyweight, with an annual budget of DKK 24.1 billion. (2016)

Population coverage (patients or users: disease/number?)

The population of The Region of Southern Denmark is approximately 1.2 million people.

The average period of hospitalization is 4.5 days pr. patient, which is among the lowest in Europe.

Coalition coverage (Partners)

The activities, commitments and the reference site of the Region of Southern Denmark in EIP on AHA are coordinated by the **Health Innovation Centre of Southern Denmark**. The Centre, which is part of the Region of Southern Denmark, focus on innovation in health and social care through deployment and roll-out of eHealth services, user-driven design, design thinking and other innovation methods to drive innovation forward in the field of active and healthy ageing. This is done in close corporation with the hospitals of the Region as well as with the industry in public-private innovation.

The coalition coverage and partners supporting the application and reference site work in active and healthy ageing have signed Letters of Intent, which are documented on the web site of the reference site. The partners consists of the quadruple helix: Academia, industry, health care providers and the citizens.

Academia (University of Southern Denmark, University College Lillebaelt, University College Syd, Center for Innovative Medicine and Technology), Industry & Clusters (Welfare Tech, Healthcare DENMARK, Enterprise Europe Network, MedCom), Health care providers (the Region of Southern Denmark, Odense University Hospital) and the citizens (CoLab Denmark). The reference site is furthermore supported through European Connected Health Alliance and participation in the Reference Site Collaborative Network.

The coalition of partners is based on the strong established ecosystem in the region within health and care innovation. The purpose of the ecosystem is to share knowledge, support activities across, cooperation and create joint value in order to meet social challenges, to generate growth and employment and to support active and healthy lives for the citizens. The details of the reference site as well as Letters of Intent are available on the Region's EIP on AHA website <https://syddansksundhedsinnovationeipaha.wordpress.com/>

Region, Municipality, City Name (or other)

Region of Southern Denmark

Number of inhabitants in the Region, Municipality, City (other)

1.2 million in the Region of Southern Denmark

1.2 Indicators of relevance, e.g. on health workforce, expenditures

Health and Care workforce (FTE equivalent)

The Region of Southern Denmark employs around 24,000 people, mainly health care professionals. (2016)

Health and Care expenditure (€ per annum)

The Region of Southern Denmark has an annual budget of Euro 3,2 billion. (2016)

Cumulative Budget (€) invested in deployment and implementation of innovative solutions for health and active and healthy ageing (period 2011-2016)

Investments in new hospitals in The Region of Southern Denmark: Euro **1,6 billion Euro**. (The new University Hospital in Odense: 1 Billion €)

- Investments in The Smart Specialization Strategy (sustainable energy, Health Innovation and tourism) : **3,3 M€ / year**
- PPI funds for Public Private Innovation leading to growth and employment: **3,75 M€** (2011-2014) **3,7 M€** (2015-2017)
- Contributions to the INTERREG 5A program from the Region of Southern Denmark: **1,5 M€** (2014-2020)
- Some of the larger innovative project/programs financed by The Region of Southern Denmark:
 - CoLab Denmark: **5 M€** (until 2017)
 - The Digital Pathway: **1,2 M€** (until 2017)
 - Project TOF (Early detection and prevention): **5 M€** (until 2017)

The Region of Southern Denmark additionally invests in several innovative initiatives and projects such as telemedicine and infrastructure, ICT and joint medical records.

Number of patients / citizens benefiting from the deployment of these innovative solutions

All 1.2 million citizens in the Region of Southern Denmark. 15 % of the population in the region are above 65 years and will potentially benefit from deployment of innovative solutions.

Cumulative Budget (€) to be invested in deployment and implementation of innovative solutions for health and active and healthy ageing (period 2016-2019)

See previous explanation in regards to investments. Final budgets for 2017-2019 are not available.

Number of patients / citizens benefiting from the deployment of these innovative solutions

All 1.2 million citizens in the Region of Southern Denmark.

Your participation in the Partnership

Have you been awarded Reference Site status before? If yes, please indicate the number of awarded stars.

Yes. The Region of Southern Denmark has since 2013 been a three star reference site in the European Innovation Partnership on Active and Healthy Ageing. Since then the Region has continued to invest in innovation in the health and social care sector. On the website, www.syddansk sundhedsinnovationeipaha.wordpress.com, the region describes its commitment and activities in the action groups covering three pillars in the EIP on AHA up until now, and describes the investments and deployment of innovation that will follow in the new period of the partnership.

Please list any EIP Action Group Commitments that you plan to submit for 2016-2018 from the organization/institution, and which specific action(s), will support those commitments.

The Region of Southern Denmark has together with its partners in the reference site application sent in eight commitments that covers all three pillars of the EIP on AHA. The participation in the five actions groups covered are: Action Group A2: Personalised health management: Fall Prevention, Action Group A3: Prevention of functional decline and frailty, Action Group B3: Integrated Care for chronic diseases, including remote monitoring at regional level, Action Group C2: Interoperable independent living solutions and Action Group D4: Age friendly buildings, cities and environments. The EIP on AHA reference site and commitments are coordinated by the Health Innovation Centre of Southern Denmark and supported by the Southern Denmark European Office (SDEO).

In the **A2 action group**, RSD has been responsible for creating an inventory of relevant activities with a potential for transfer regarding: Raising awareness and delivering information, and successful public health and social marketing strategies, including events and campaigns to share experience and practical tips. RSD will continue this work as well as hosting workshops in Bruxelles within the DACOB network (<http://www.dacob.eu/>) to European regions in regards to implementing and upscaling innovative technological solutions and sharing of good practices.

In the **A3 action group**, RSD has made a commitment which is led by the University of Southern Denmark where focus is prevention of frailty in 80+ year old community-dwelling citizens. Focus will be to study the effect of exercise and nutrition in the elderly population. The results of the project will be communicated both during research circles and through the EIP on AHA network.

In the **B3 action group**, RSD has commitments covering dissemination activities within innovation in health and social care through the hosting of large events, such as the Week of Health and Innovation (www.whinn.dk) which will support the transferring of experiences across Europe and at the same time be a platform to showcase the Region of Southern Denmark as a reference site. In the EU project ACT@Scale, the Region is partnering and through this project focus will be on dissemination of innovative services in active and healthy ageing. This will be done in collaboration with all partners as well as Philips who will be leading the project. In addition to knowledge sharing and dissemination activities, focus will be on monitoring the effect of integrated care services for the elderly population. Though services implemented a study is currently underway documenting the effect of ICT and integrated care pathways. This will not only be documented through MAFEIP in the EIP on AHA, but also by the use of MAST. The results will be available through the EU project SmartCare. Just recently a national initiative was launched to implement and deploy monitoring solutions for COPD patients, thus improving the quality of life, and prevention of hospitalisation. The service was initiated this year and will be part of a larger national programme. During the life-span of the project, innovative procurement will be utilized making the work in this programme a part of the C2 action group as well. As a reference site, the Region has also suggested a new action group in B3. This would focus on eMental Health and how innovative services can curb the health and social care expenditure. The Region is leading a European CIP project, Mastermind, and the core partners behind the project support the action group. Once the action group has been approved, work will be conducted to collect the partners behind this initiative and draft action plans etc.

In **D4 action group**, the University of Southern Denmark has together with the Region submitted a proposal to study the inequality in health and physical inactivity among seniors. The project will provide evidence on how to support and promote physical activity and healthy lifestyle through age friendly planning of local environments. The results will be disseminated in scientific articles and will be followed closely in order for the results to feed into the work of D3 – Smart Living Environments.

2. SECTION 2 - YOUR ACTIVITIES relating to EIP on AHA

2.1 Pillar I: Prevention, Screening and Early Diagnosis

Within prevention, screening and early diagnosis the Region of Southern Denmark and its partners in the reference site collaboration, have the following responsibilities;

The Region is responsible for primary health care, and included in that area is the establishment of health agreements between the Region (which include the hospitals), the municipalities (prevention, rehabilitation and social care providers) and the General Practitioners (GP). These agreements play a significant role in the region's work with Pillar 1 as it is the formal framework for the cross-sectorial cooperation within healthcare, prevention, screening and early diagnosis. The agreements cover a period of 4 years (2015-2018), and cover a wide and complex area concerning every mutual obligation between the different parties in the health care sector. The agreements ensure a coherent continuity of prevention, rehabilitation care and quality across the different sectors in the region.

In the agreements it is described how the municipalities have the primary responsibility for health prevention of all citizens. The agreements also explain how municipalities are responsible for the overall screening of citizens through the obligatory home visits of elderly citizens. Last but not least, the plans also details the municipalities responsibility to carry out home visits when patients are discharged from hospital in order to established a personalised plan for rehabilitation and continued care.

The GP's are the gatekeeper and first entrance into the health system and the agreements clearly describes how they are responsible to be in close contact with the municipalities in relation to early diagnosis and has the responsibility to refer and prescribe the citizens to treatment and care, follow-up examinations by specialists and / or preventive interventions to prevent frailty and functional decline.

One of the aspects that underpin prevention is prescription and adherence. In the Region of Southern Denmark as well as in the rest of the country, a Shared Medicine Record (SMR) has been rolled-out and it is fully implemented in all hospitals in the Region of Southern Denmark. This ensures health professionals and patients have direct access to data about prescribed medicine.

The Region of Southern Denmark (RSD) has several activities supporting the work in the first pillar – and has submitted 2 commitments to pillar I and will be active in A2 & A3.

How do they relate to A1. Prescription and adherence action at regional level?

The vision for the health care system in Denmark is to provide coherent clinical pathways through the various parts of the health care system, focusing on the needs of patients and high quality of treatment. One of the main prerequisites for establishing a coherent and cooperating health care system is to ensure that all health care professionals dealing with a patient have easy access to relevant patient information where and when it is needed. This strengthens the base for decision making and enhances patient safety.

Digitalisation is the key element in achieving this goal by giving health care professionals access to data and across the entire health sector. A Shared Medication Record (SMR) is a national service in Denmark which has been rolled out nationally. It provides a digital overview of a patient's current medication. Lack of full knowledge about a patient's medication often leads to medication errors and hospital admissions. The incomplete knowledge is often due to the fact that the main source of information on the patient's medication typically is the patient him or herself. As a patient, it can be difficult to remember all currently prescribed medication as well as the correct name of the medicine. As a consequence, the clinician often receives incorrect or incomplete information. This can potentially be harmful to the patient.

To counter this problem, SMR has been implemented across the Danish health system. The system consists of a central database containing information on all Danish citizens' medicine dispensed during the previous two years as well as an updated list of every patient's current medication. Though the system citizens, doctors, emergency physicians and other health care professionals will have digital access to updated information on the patient's prescribed medication. Access is established through local EHR systems at hospitals and in private practices or via the eHealth portal (sundhed.dk). The patient can also access the shared medication record through sundhed.dk. See more at <http://healthcaredenmark.dk/the-case-of-denmark/doctor.aspx>

As the service is fully implemented regionally, the Region of Southern Denmark has not sent in a commitment in this action group. The service is today monitored by MedCom, one of the coalition partners in the reference site. The service is furthermore disseminated and learnings are transferred to international partners through Healthcare DENMARK – also a coalition partner in this application. Healthcare DENMARK has a national and political mandate to promote Danish healthcare excellence. Backing this initiative is a partner group of both public and private key actors within Danish healthcare, including the Ministry of Health, the Ministry of Foreign Affairs, the Ministry of Business and Growth, Danish Regions, Region of Southern Denmark, the Confederation of Danish Industry, the Confederation of Danish Enterprise, Falck, KMD, and Systematic.

How do they relate to A2. Personalised health management, starting with a Falls Prevention Initiative?

One of the fundamental strengths within the integrated health care system in the Region of Southern Denmark, is the clear and strong collaboration between on the one side the Region, which is the primary health care provider, and on the other hand the municipalities, which provide all other health and care services such as health promotion, disease prevention and rehabilitation. This collaboration is supported by organizational agreements as well as ICT-based solutions that empowers the citizen and creates an effective and efficient health and care system.

The concept of "Everyday Rehabilitation" changes the way we look at our elderly citizens from "helpless" patients to citizens with resources. It changes the assumptions for future care by looking at the individual's resources and by providing self-help instead of providing compensatory – and pacifying care. "Everyday Rehabilitation" is rehabilitation with a purpose of the elderly making them capable to handle as many things as possible in their daily routine; with or without technological support. It is a rehabilitation period that follows after a period of hospitalisation, in order to ensure independent living and prevention of incidents in homes, such as falls.

The so-called "Life Long Living Model - Maintaining Everyday Life as Long as Possible", which is a well-known example of "Everyday Rehabilitation". The model won the best practice prize during the "EY 2012 of Healthy and Active Ageing and Intergenerational Solidarity", as good practice example, within the category of "Age Friendly Environments". Fredericia municipality, which is the founder of the model, has also been an active partner in the AFEInnovnet project and is the only founding Danish member of the "Covenant on Demographic Change" and continues to support the propagation of the covenant in Denmark.

The "Life Long Living Model - Maintaining Everyday Life as Long as Possible" has been evaluated through a close collaboration between Fredericia municipality, the Danish Institute for Health Services (DSI) and iTracks, and the evaluation clearly shows benefits corresponding to the triple win situation.

In the previous period, RSD has been active in the **A2 action group**, and has been responsible for creating an inventory of relevant activities with a potential for transfer regarding: Raising awareness and delivering information, and successful public health and social marketing strategies, including events and campaigns to share experience and practical tips. RSD will continue its commitment in A2 and has in that connection established a close collaboration with SDU (Institute of Sports Science and Clinical Biomechanics), and municipalities in the Region focusing on disease prevention and rehabilitation through the promotion of physical activities.

How do they relate to A3. Action for prevention of functional decline and frailty?

In relation to prevention of functional decline and frailty, the concrete responsibility towards the citizens lies on local level, and is as explained above, described in details in the health agreements that the region has made with the municipalities and the general practitioners.

The Region of Southern Denmark (RSD) has initiated, together with University of Southern Denmark (SDU), municipalities and the General Practitioners a project focusing on Prevention, Screening and Early Diagnosis, called TOF. The aim is to study the effect of early and systematic detection of adult citizens living unhealthy and at risk of developing lifestyle diseases, and to offer a targeted and coherent prevention procedure in the primary healthcare sector readjusting the healthcare system in order to identify citizens at risk. The project will run during a period of three years and will bring evidence to verify or falsify the hypothesis that early screening and diagnosis, and preventive interventions in an earlier stage in life, will especially provide positive results to vulnerable citizens, to attain a healthier and more active ageing period. <https://www.regionsyddanmark.dk/wm426032>

Actions that support prevention of functional decline and frailty is furthermore present in the project "Rehabilitation.dk" that is coordinated from the Health Innovation Centre of Southern Denmark. A Danish analysis indicates that there is a financial and qualitative potential in a national dissemination of digital support of rehabilitation for a number of selected groups. The analysis has been conducted as part of the Danish joint public strategy for digital welfare with the objective of "integrating digital technologies as part of rehabilitation programs by 2020". It furthermore shows there are few barriers for the implementation of digital rehabilitation. (PA Consulting Group 2014: "Analysis of Digital supported rehabilitation").

In the Region of Southern Denmark, municipalities, hospitals and the region have come together to develop a solution for digital rehabilitation. The result so far is "Genoptræn.dk" (Rehabilitation.dk) – a virtual guide to rehabilitation. Genoptræn.dk is currently being used by a number of municipalities in the Region of Southern Denmark and also in the Capital Region of Denmark. The experience so far is that patients who work with this solution achieve a higher degree of physical fitness after completing a course of rehabilitation training than the patients who are left with just the conventional support. The aim of this project is to investigate this assumption further both clinically but also from an organizational perspective. One of the primary focal points for working with Genoptræn.dk is that it must be easy to implement and use the patient's own devices (BYOD) as much as possible. Although the concept might be quite sophisticated, the solution itself must not be perceived so by the people using it. Results will be disseminated at national and international conferences and will thus be shared with the EIP on AHA community.

The Region of Southern Denmark will in the new period be **involved in A3** and has in that connection established a close collaboration with SDU (Institute of Sports Science and Clinical Biomechanics), and municipalities in the Region focusing on disease prevention and rehabilitation through the promotion of physical activities. The project that has been put forward has focus on prevention of frailty in 80+ year old community-dwelling citizens. As part of a national project, researchers will study the effect of exercise and nutrition in the elderly population. The results of the project will be communicated both through research circles and through the EIP on AHA network in the Action for prevention of functional decline and frailty.

2.2 Pillar II: Care and Cure

RSD has various initiatives associated with the focus areas in the second pillar and related to the **B3 action group**. In the ecosystem, which the reference site of Southern Denmark represents, there is a strong focus on innovation and on bringing quality, efficiency and growth to the health and social sector (triple helix). This is achieved in alliance with key stakeholders, and together they are working towards representing the Quadruple Helix – Academia & Research, Industry & SMEs, Citizens and Health providers (as represented by RSD). This is further described and documented in Criteria 1 and by Letters of Intent. In accordance with the EIP on AHA SIP, the focus of the reference site is in B3 and in bringing integrated care to all citizens through a coalition and alliances of partners – through initiatives and projects that are located in the region.

Through programs such as SAM:BO, ICT systems and CoLab Denmark, the focus is to bring integrated care to the citizens of the region and collaborate between health sectors based on digital technologies. The aim is higher quality, efficiency, and patient satisfaction, and improved collaboration between all health and social care parties in the region. SAM:BO supports care pathways for citizens and patients and builds on the concept of LEON – lowest possible cost level – which means that the patient will receive the best and most efficient care possible without compromising the provision of healthcare.

In addition, ICT systems are in place and designed to be used in complex treatment processes where several sectors are involved, and relevant information is provided at the right time and place. The system is established on the basis of the chronic care guidelines, which have been issued both nationally and internationally. Agreements, guidelines and infrastructure will be key components when monitoring services for COPD patients and will be rolled-out during the next three years both regionally and nationally.

RSD furthermore runs the living lab CoLab Denmark. With its development and test facilities simulating the entire healthcare system across sectors, it is an important initiative in the region's work with integrated care and home monitoring. CoLab Denmark is not only linked to **B3** but also to the **C2** actions developing interoperable independent living solutions.

How do they relate to B3. Replicating and tutoring integrated care for chronic diseases, including remote monitoring at regional level?

As a regional health care provider, the Region of Southern Denmark (RSD) has sent in five commitments supporting **B3** – replicating and tutoring integrated care for chronic diseases, including remote monitoring at regional level. RSD is present in several activities and projects that relate to this field and has rolled-out and implemented services in the field of integrated care. Learnings from the implementation and deployment have been transferred to other regions through European projects such as SmartCare (www.pilotsmartcare.eu) where the RSD was among four front-runner (first wave) regions in rolling out integrated care services which included the remote monitoring at a regional level. Later other regions followed and adapted their services to their regions based on research and the learnings from the first-wave regions. The service is based on collaboration agreements such as SAM:BO, ICT services and systems. The evaluation of integrated care services will be published later this year, and the aim is to be assisting in replicating and tutoring integrated care services to other European regions.

In addition, through the EU project Connected for Health (http://epliiitto.fi/connectedforhealth_en), which RSD is part of, the foundation will be laid for the ICT infrastructure of services which is vital for implementing remote monitoring. Focus for the project is to identify, test and evaluate new and existing systems and services for providing accessible home health care over open FTTH (Fiber to the Home) networks. The idea is to find most suitable, user friendly and cost-efficient combinations of systems for individual needs of citizens.

Just recently a national initiative was launched in Denmark to implement and deploy monitoring solutions for COPD patients, thus improving the quality of life, and prevention of hospitalisation. The service was initiated this year and will be part of a larger national programme. The roll-out of these services will be governed by each region in Denmark, and the Region of Southern Denmark plans to make the results available as the implementation is carried out. The set-up and roll-out of such services will require learnings from other European regions which must be transferred to a regional setting. Through national and European events (i.e. in EIP on AHA), the Region will gather knowledge and will in addition make sure to share learnings not only on a national scale, but also on a European scale.

Therefore, in the **B3 action group**, the Region of Southern Denmark has commitments covering dissemination activities within innovation in health and social care and will host large events, such as the Week of Health and Innovation (www.whinn.dk). Events like this which will run in the following years will support the transfer of experiences across Europe and at the same time be a platform to showcase the RSD as a reference site. Additionally the RSD is partnering in the EU project ACT@Scale. RSD will through this project focus on dissemination of innovative services in active and healthy ageing. This will be done in collaboration with all partners as well as Philips who will be leading the project. In addition to knowledge sharing and dissemination activities, focus will be on monitoring the effect of integrated care services for the elderly population.

CoLab Denmark will be an integral part of the activities in **B3** as it is formed on a collaboration model that has been established to strengthen the Danish health care technological development. CoLab Denmark combines the private sector and the public sector, including municipalities, hospitals and general practitioners, to develop sustainable solutions to the challenges facing the health care system - including integrated care and the remote monitoring of chronic diseases. A professional network of highly skilled representatives from each sector has been established based on the fundamental idea that big challenges are solved better together.

As a reference site, the Region has also suggested a new action group in **B3**. This would focus on eMental Health and how innovative services can curb the health and social care expenditure. The Region is leading a European CIP project, Mastermind, and the core partners behind the project support the action group. Once the action group has been approved, work will be conducted to collect the partners behind this initiative and draft action plans etc.

The work carried out in **B3** will be supported by the coalition of partners present in the reference site application reflecting the quadruple helix of partners (health, academia, industry and citizens) with a focus on the triple helix (growth, quality and efficiency).

2.3 Pillar III: Active Ageing and Independent Living

As a reference site, RSD and its key stakeholders are investing heavily in innovative approaches, methods and solutions for the ageing population focusing on quality of life, sustainable healthcare system and growth for the industry. The focus is empowerment of all citizens, in order for them to stay independent and autonomous for as long as possible preferable in their own home and community environment and to remain socially active. Several initiatives and projects have been established in order to create an ecosystem and environment that enforces innovation and a market for interoperable solutions. RSD is active in C2 focusing on the innovative procurement of services and products.

The Region has established CoLab Denmark, which is a living lab for the sharing and learning of knowledge within innovation. The focus of the living lab is on the triple helix: quality, efficiency and growth. This combination makes it an excellent European test bed for testing, demonstrating and implementing innovative solutions, products and processes. In addition, the Region and key stakeholders are involved in Patient@home, which is Denmark's largest assisted living technological research and innovation initiative focusing on new technologies and services aimed at especially rehabilitation and monitoring activities within the Danish public health sector. The initiative is managed by University of Southern Denmark, and is partly funded by RSD.

The Health Innovation Centre and the associated national health and technology ECEI-Gold Label cluster Welfare Tech offers well organised and smooth pathways for companies. Companies can test their products and services in simulated and real settings in the Centre's test facilities, CoLab Denmark, consisting of five different living labs located across in the region or in the state-of-the-art test facility called CoLab Plug & Play where companies can gain access to a unique test environment when it comes to interoperability involving citizens and health professionals when testing in authentic environments. (<http://com.colab-denmark.dk/lokalt/colab-plug-play/>).

The Health Innovation Centre is furthermore highly involved in innovative procurement by having access to procure in the Region and assisting these in the PPI/PCP process. Through the EU project SILVER the region has driven the process forward in an EU setting. (www.silverpcp.eu/) The Centre has also developed PPI guidelines, which are now available on national level.

How do they relate to C2. Development of interoperable independent living solutions, including guidelines for business models?

Independent living and patient empowerment have been a top priority for the Region of Southern Denmark since the region was established in 2007. Therefore, the Region of Southern Denmark has been committed to and participated in the mapping of independent living and PPI/PCP solutions in the C2 action group. Through the SILVER PCP project which was one of the first approved European projects about PCP, the Region of Southern Denmark has shared its knowledge in the Action Group. You can find information about the project here: <http://www.silverpcp.eu/>

Furthermore, the Region of Southern Denmark has coordinated the national project OPI Lab which aims at overcoming barriers between the public and the private sector. The project has developed "model agreements" where public and private partners can make use of guidelines to ensure legal correct and hereby increase cooperation between public and private partners. The model agreements have been used for a number of PCP and PPI pilot tests in Denmark with significant impacts and results. The model agreements showcase business models which results in a higher impact and return of investment, since companies have more certainty that they can sell products and services when the development process have been carried out in a coalition of public and private partners. The Region of Southern Denmark and the OPI Lab which is now hosted at Welfare Tech (a coalition partner in the reference site) want to share these important results with European partners and therefore continue the commitment to participate in the C2 Action Group. You can read more about OPI Lab here: <http://www.opilab.dk/>

Furthermore, the Region of Southern Denmark has formalised collaboration with private driven test beds in the region. Besides living labs established in conjunction with CoLab Denmark at the hospitals, companies like Public Intelligence (<http://www.publicintelligence.dk/english.php>) and SE Next Step Citizen (<http://www.nextstepcitizen.dk/nsc>) offers test facilities for partners that want to test new products and services, and they provide training for healthcare professionals. The involvement of private partners stimulates the increasing market for independent living solutions and interoperability. It is agreed that the test beds focus on citizens profiling will be shared in the C2 Action Group.

In addition, the University of Southern Denmark is together with the Region participating in the biggest national project on eHealth, called Patient@Home. This project has developed several independent living solutions. A focal point in the focus on patient empowerment is user-driven methods where solutions fit better to the patients need, and hence increase chances of a longer and better independent living for patients and primarily elderly people. <http://www.en.patientathome.dk/>

Just recently a national initiative was launched to implement and deploy monitoring solutions for COPD patients, thus improving the quality of life, and prevention of hospitalisation. The service was initiated this year and will be part of a larger national programme. During the life-span of the project, innovative procurement will be utilized making the work in this programme a part of the C2 action group as well.

2.4 Horizontal issues (including Contributions to MAFEIP and to the EIP on AHA Repository of Innovative Practices)

In regards to the horizontal issues and the D4 action group, the Region of Southern Denmark (RSD) will be actively involved through our EIP on AHA partnership with research centres such as the institute of Sports Science and Clinical Biomechanics that has a research unit carrying out research within spatial local and rural planning and active living, which has already assisted several local authorities in the region to develop spatial plans, that supports active living and health promotion. The unit participates in a research project focusing on spatial planning to support active living among seniors, which has been submitted as a concrete commitment to D4 – inclusive smart cities.

The Region has acknowledged that there is a rising need for decision making support in the process of development and implementation of innovative health technologies. Sound approaches for early assessments of the expected value on innovations, coping with the uncertainty and flexibility inherent in innovations, are lacking. Along with the challenging economic conditions for health care over the next years, and the increasing focus on innovations, a new approach to the estimation of the expected long term return on innovative health technologies, early on in the process of technology development, is currently being developed. Therefore, currently a Ph.D. is running in collaboration with SDU, with the objective to develop a tool for early assessments of the expected value of innovative health technologies, which can be used by hospitals to select innovations with a high probability of becoming economic feasible in the stage of routine use. Learnings from this research will be rolled out in August 2016 and will be a firm commitment in EIP on AHA.

In regards to evaluation of innovative services and solutions, the region has a strong focus on research as it is a prerequisite for innovation. CIMT – Centre for Innovative Medical Technology is a joint research centre established by Odense University Hospital and the University of Southern Denmark, and is the leading institution within evaluation of eHealth services in Europe. CIMT was in charge of the development of the MAST evaluation model on behalf of the European commission. This model is the basis of the evaluation of a large number of EU funded projects, like United4Health, SmartCare, Connected for Health, and MasterMinds (www.cimt.dk). The Region will through its commitments to EIPonAHA support MAFEIP and will submit evidence of innovative services.

How do they relate to D4. Age-friendly cities, buildings and environments?

According to WHO, the physical and social environments are key determinants of whether people can remain healthy, independent and autonomous long into their old age ("Supportive environments" is one of the four strategic priority areas for action in the recently endorsed "Strategy and action plan on healthy ageing for Europe. 2012-2020" of WHO/Europe). With age-friendly environments, barriers can be removed, elderly people can be empowered to age in better physical and mental health, promoting their social inclusion and active civic participation, and help them maintain a good quality of life.

In **D4 action group**, SDU has together with the Region submitted a commitment to study the inequality in health and physical inactivity among seniors. This project wants to provide evidence on how to support and promote more physical activity and healthier lifestyles among senior citizens, changes in the physical local environment and public space, based on empowerment of the seniors and co-creation principles. The project has a multidisciplinary approach combining (public) health research, spatial planning and design and architecture. The main theoretical frame for the project is public health, which takes a starting point in the citizen's daily life settings and living conditions. The hypothesis for the project is that in order to work actively with health inequalities among seniors, related to physical activities, it is important to focus on concrete changes and interventions in the public space, making streets, squares and the nature easily accessible for activities in groups. The project will provide evidence based guidelines on how to create a better connection between the physical local environment, health and active ageing. The results will be disseminated in scientific articles and will be followed closely in order for the results to feed into the work of **D4 – Smart Living Environments**.

The Region is investing € 1.6 billion in new hospital constructions. The hospital of the future – the New Odense University Hospital (<http://www.nytouh.dk/english>) will be built by 2022 in Odense, and all other hospitals in the Region will be improved either through new interior remodelling or through additions to the hospital. These new constructions will be built focusing on creating the best environments for the best possible hospital care in the region as well as a working place where focus on innovation is a high priority. This is needed when the New University Hospital will be opened as there will be a reduction of beds by 20 %. In the construction process of the new hospitals, the Region is looking towards innovation and user-involvement. The Health Innovation Centre of Southern Denmark has just published several reports on how patients and users can be involved in the new hospital construction, buildings and environments.

By involving the patients, parallel to the involvement of health professionals, the Region gets useful inputs from the actual users. The focus in the reports are on the areas surrounding the patients such as wards, waiting facilities, receptions, areas for children and adolescents and prayer halls. This has been accomplished through a number of different workshops focusing on the relevant target groups. As an example a workshop with schoolchildren was carried out in order to work with their visions and ideas for the future surroundings for children in the new hospital. It is a high priority for the new hospital to support the future patients in order for them to become more active in their own course of treatment.

Furthermore several test cycles has been conducted at the existing hospital where patients and relatives has had the opportunity to try out different piece of furniture and ideas for interior decoration. These results will be included in furnishing and planning of new hospital. The reports carried out by the Health Innovation Centre of Southern Denmark are openly presenting the needs and inputs from the patients and are available for other hospitals as well.

3. SECTION 3 - YOUR CARE MODEL

3.1 Care System/Model Organisation

The Danish health service is largely financed through local (municipal and regional) income taxation with integrated funding and provision of health care at the regional level. Medical treatment in Denmark is available to all residents. The Danish health system is divided into different sectors and the responsibility is divided between regions, municipalities and general practitioners. Regions in Denmark are responsible for running the hospitals including psychiatric treatments. Hospitals are responsible for patients who require more specialised medical treatment, for example intensive care or the need for specialist equipment. The primary health care is attended to by the GP. The GP deals with general health problems and as a gatekeeper, the GP handles the coordination of health and care services. The municipalities are, based on referrals responsible for providing health promotion, rehabilitation and recovery, and homecare for elderly and the disabled.

The Region invest in creating innovative solutions within healthcare and through EU funds (such as European Social Fund and European Development Fund), the Region of Southern Denmark (RSD) invests more than 24 M€ every year to implement the Smart Specialisation Strategy (S3). Several of the funds are dedicated to the development and deployment of innovative solutions for active and healthy ageing including the promotion of public-private partnerships. The initiatives are focusing on generating interaction between the public and private sectors with a view to exploiting shared potential and creating common solutions. The growth model is designed to catalyse innovation and growth in the Healthy Living and Active Ageing sector to meet a triple win; to provide the citizens with a high quality experience, to improve the efficiency of the health care system and strengthen the competitiveness and growth for the businesses. So far, the monitoring and evaluation of S3 has shown impressive results as there has been an increase in employment as well as a two-digit turn-over for health and social innovation enterprises (so far only evidence in Danish).

Denmark is investing € 4,5 billion in improving Danish hospital facilities all over the country. The investment is part of a structural reform plan for the Danish health care system where hospital care becomes centralised in fewer locations, and the objective is to provide a modern health care system with highly specialised departments in order to ensure patients the best possible treatment. The Region is constructing a new University Hospital in Odense (New OUH). The project is expected to complete in 2022 and become the largest hospital in Denmark that is built from scratch. It will consist of a total ground floor area of 212.000 m². New OUH will be integrated with the Psychiatric Department which is being constructed simultaneously and will also be physically connected to SDU in order to ensure better connection between research and practice. The New University Hospital will have a reduction of beds by 20 % in 2022 meaning that bed-days must be reduced gradually to 3,5 average bed-days compared to 4,5 at present. One solution is innovation – though design thinking and open innovation.

In the context of modernization, RSD has established the Health and Innovation Centre of Southern Denmark in 2012. The Centre focuses on bringing integrated care to the 1.2 million citizens of the Region as well as being a meeting point and an accelerator for public and private innovation partnerships through user-driven innovation and concepts such as design-thinking and open innovation. At the Centre new solutions within health innovation are developed including new ways of designing hospitals, and improved telehealth and telecare solutions. This is conducted in close collaboration between health and care organisations and private companies.

The centre co-ordinates the region's engagement and commitment to the EIP on AHA, and ensures that good practices and learnings from the EIP are disseminated and applied, where relevant, within the regional modernisation process, and especially within the process of building new and modern hospitals.

3.2 Management of Care Processes

In order to provide an overview of the Management of the Care Processes in RSD the description will be structured according to WHO's six building blocks of a health system, which answers the management of care processes and how the system can improve health outcomes:

*1. Good health services are those which **deliver effective, safe, quality** personal and non-personal health interventions to those that need them, when and where needed, with minimum waste of resources.* As a region, RSD is responsible for health care and the focus is to use the lowest effective resource level (LEON) with combined with LEAN (and Virginia Mason) creates the foundation for improving and creating a sustainable health system. All hospital departments have **protocols and guidelines** for treatment and for complicated diseases incl. co-morbidities, which have been created to encompass the entire patient pathway. The Region and key stakeholders are working actively to involve citizens in the management of their own disease and through empowerment create a sustainable health and social care system.

2. A well-performing health workforce is one that works in ways that are responsive, fair and efficient to achieve the best health outcomes possible, given available resources .. Academia presented in the reference site is focused on creating and maintaining a well-performing health work force. The University Colleges and the University of Southern Denmark educate health professionals making sure they adhere to the highest standards and in addition courses in innovation are continuously improving the health services. Once employed at the hospital continuous **training and education** as well as research is part of the daily work-life. The high standard of training and education optimize condition for implementation and deployment of new innovative services and products as well.

3. A well-functioning health information system is one that ensures the production, analysis, dissemination and use of reliable and timely information. Though advanced mechanisms, focus on research and evidence, and digital infrastructure lying underneath a fully implemented EHR system in the Region, the reference site is able to disseminate and use reliable and timely information in care of its citizens. At CIMT – Centre for Medical Technology and Innovation - research and evidence in the health and technology field is collected and disseminated and together with the Health Innovation Centre of Southern Denmark, best practice and innovation is adopted, transferred and implemented in health and social care. Additionally all electronic communication is standardized and integrated through national guidelines issued by MedCom. According to the European Benchmark 2013 the use of ICT in GP practices, Denmark was ranked highest (Commission Report, 2013; Benchmarking Deployment of eHealth among General Practitioners). In addition, as described in pillar 1, the Region is carrying out a study to assess the effect of early and systematic detection of citizens living unhealthy and at risk of developing lifestyle disease, offering targeted and coherent prevention procedure.

4. A well-functioning health system ensures equitable access to essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness, and their scientifically sound and cost-effective use. The public nature of the health and social care system in Denmark means equal access for all citizens to the health system. In addition, services are implemented based on business cases, and must go through rigorous evaluation and research. The region introduces all new innovative services and products in the technology field through either HTAs or MAST evaluations, adhering to the evaluation scheme of the reference site status.

5/6. A good health financing system ...provides incentives for providers and users to be efficient. Leadership and governance ensures policy frameworks: The 'cornerstones' of the Danish healthcare system: it is a public healthcare system predominantly **financed through general taxes** as previously described. Healthcare is organized in such a way that responsibility for services provided lies within the lowest possible administrative level.

3.3 Information and Communication Systems

The Region of Southern Denmark (RSD) has implemented ICT systems to support the quality, availability, management and improvement of clinical practices. The communication between and within the care structures is facilitated both on a horizontal and vertical level. A prerequisite for this communication is the Danish Personal Identification number, which is a national identification number, which is part of the personal information stored in the Civil Registration System. According to the Digital Economy and Society Index (DESI), Denmark ranks highest in Europe (ec.europa.eu/digital-single-market/desi) in digital performance and digital competitiveness.

For more than 20 years, Denmark has seen a significant roll-out of IT services within the entire healthcare sector with the hospitals, general practitioners and municipalities leading the way. The daily life of healthcare professionals has changed, millions of Danish kroner have been saved and patients receive better insight, higher quality and efficiency in treatment. Part of the success can be ascribed to MedCom, which was established in 1994 as a public funded, non-profit cooperation. MedCom facilitates the cooperation between authorities, organizations and private firms linked to the Danish healthcare sector. The organization contributes to the development, testing, dissemination and quality assurance of electronic communication and information in the healthcare sector in order to support excellent continuity of care. Thus, MedCom is developing standards and profiles regarding exchange of health care related data throughout the entire Danish health care sector. Furthermore, MedCom supervises and monitor the national technical and organizational implementation of the standards/profiles (www.MedCom.dk).

The Region has direct responsibility for the running of the region's five hospitals. For the inhabitants of the rural areas, who are often elderly people with a frail state of health, distances to both primary care clinics and hospitals are long, and therefore the region is looking to innovation as a mean. The current demographic challenge (a growing number of older citizens combined with a labour force decreasing in size), calls for a healthcare system with high patient safety, availability, flexibility in care, quality of care, and high productivity. By turning the abovementioned challenges into opportunities and strategic priorities, RSD has become a centre for innovation in healthcare with a strong ICT infrastructure. This is established through the regional project The Digital Pathway, where results are being transferred to a EU setting in the EU project Connected for Health. In addition, the healthcare ICT infrastructure is based on programmes for continuity of care and health agreements between the different parties in the regional healthcare system (SAM:BO).

The building blocks of this infrastructure include the Danish Health Data Network, electronic health and care records, and the online health portal (sundhed.dk). The healthcare ICT infrastructure is supported by several organisations and strategies at national, regional, and municipal level. Figures from 2010 show that 88% of the population has access to a computer and 86% of the population has access to the internet in their own homes. This indicates that the Danish population has a high degree of IT and computer literacy.

To ensure that the already well-established healthcare IT infrastructure is further developed, the region makes considerable investments in new eHealth related projects; regional, national, as well as international. The ultimate aim is to improve the quality of life for older people, and allow for more flexible and efficient home care services in the rural areas. Additionally, RSD works towards a higher degree of interoperability of health information systems and also interoperability of electronic health records.

4. SECTION 4 – RATING CRITERIA

4.1 Criterion 1. Political, Organisational, Technological and Financial Readiness

To what extent can your region show political, organisational, technological and financial readiness towards the objectives put forward in your region? (X) To a great extent

Innovation for active and healthy ageing is, as previously mentioned, a strategic priority for the Region of Southern Denmark as a public health care provider. Several strategies in the region focus on innovation and the region has established an innovation committee where elected political members deal with combining the region's responsibility for development of health and social care (welfare) services and business development and public-private innovation. The committee also focuses on creating the right environment for the development and implementation of new technology, and through the Health Innovation Centre of Southern Denmark decisions are carried out on a regional level. Through the Smart Specialisation Strategy S3 (see uploaded "profile brochure" and "the future of business"), the activities within EIP on AHA are seen as an integral part of the Region's priorities. As previously stated one of three pillars in the S3 is health innovation, which means the reference site has a strong strategy and readiness for implementing innovation within active and healthy ageing.

The Region acts as the driving force behind the priority to create the best possible framework for citizens and the business community, and to make South Denmark an active and dynamic region. This requires close quadruple helix collaboration and hence the ecosystem comprises all relevant actors; companies, knowledge institutions, businesses, investors, citizens etc. as described and illustrated in the uploaded document "ECOsystem".

In order for the companies to find their way in the complex health and care sector and to test if their services/products work before they are implemented, CoLab Denmark has been established (www.Colab-Denmark.dk). Academia is represented in the Regional Growth Forum with the University of Southern Denmark with more than 27,000 students has research centers such as the Max-Planck Odense Institute, Centre for Active Living, the Maersk Mc-Kinney Moller Institute and the University Colleges that train applied social science to all professional practitioners in the health and social care sector. For securing funding and resources for the successful deployment and implementation of innovative solutions for prevention and health promotion, care and cure and active and independent living of elderly people, several sources of funding are available. The Region can through the Growth Forum (described in next section in detail) both attract and commit resources for the testing, development and deployment of innovative services in this area.

The technical infrastructure of the reference site has also been established and is documented through the status report of MedCom that describes the full implementation of a Health Data Network, EHRs as well as integration of communication and services.

Upload:

1. *Profile brochure Region of Southern Denmark*
2. *The future of business in Region of Southern Denmark*
3. *ECOsystem Reference Site Region of Southern Denmark*
4. *Growth forum*
5. *MedCom – 20 years*

4.2 Criterion 2. Sharing learning, knowledge and resources for innovation

To what extent does your region have an innovation and improvement infrastructure that facilitates the learning process, builds improvement capabilities and enables transfer of knowledge? (X) To a great extent

The Region of Southern Denmark (RSD) has, as previously described a well-established ecosystem and infrastructure within health and care innovation which facilitates knowledge sharing and cooperation, and the capability to support learning and coaching allied to the EIP on AHA aims. Growth Forum of Southern Denmark is one of the formal collaboration bodies, involving representatives from the Regional Council, municipal boards, education institutions, and the business community. The Forum is responsible for setting up the regional strategy for business development, the objective of which is to increase productivity, growth and jobs in the region and utilise yearly around 13 M€ of the regional business development fund and around 11 M€ from the structural funds (ERDF and ESF) to implement its strategy.

Furthermore, the region has established the Health Innovation Centre of Southern Denmark in order to foster innovation across health and social care sectors. The Centre has established several living labs, test facilities, 1:1 mock ups of hospitals departments and ICT infrastructure mock ups. New solutions within health innovation, including new ways of designing hospitals and innovative eHealth solutions are developed, tested, implemented and up-scaled (based on available evidence). All is conducted in a close quadruple helix collaboration between; public health and care organisations, private companies, knowledge- and education institutes and end-users. In regards to training and education of innovation, several programmes have been established within academic organisations for health professionals. In addition, the Health Innovation Centre offers training and education in innovation to healthcare professional or other stakeholders in the region; “Eduvation” relates to the work-life of health professionals and the potential for innovation and qualifies them to manage future challenges through innovation and to identify new methods through design thinking, rapid ethnography, rapid prototyping/test and co-creation. This in conjunction with research in innovation at educational institutions in the Region makes it an ideal breeding ground for innovation in active and healthy ageing.

Across the ecosystem there are forums, which facilitate learning and enable transfer of knowledge. Through DRU (the Regional Committee on AHA) actors in the Region meet in order to coordinate international activities, engage partners, form new cooperation, disseminate knowledge and experiences from projects, and engage in discussion on relevant topics in order to support continuous improvement within innovation in active and healthy ageing. The Region and its partners furthermore organise events, programmes and initiatives that support the transfer of knowledge and the aim is to share research and results within innovation. The Region hosts many regional, national and international events and conferences, including a Week of Health and Innovation (WHINN), which is an international conference specifically focusing on innovation in health and social care (www.whinn.dk). The event attracted more than 2.000 participants in 2015 which makes it one of the biggest conferences in health care and innovation. WHINN is expected to be a continued returning conference in the years to follow, and consequently will establish a brilliant platform to showcase the Region of Southern Denmark as a reference site.

Upload:

- *EIPonAHA and the Region of Southern Denmark*
- *CoLab Denmark*
- *SDSI hand-out*
- *Reference Site Brief Description of all commitments submitted April 15th, 2016*

4.3 Criterion 3. Contributing to European co-operation and transferability

To what extent has your region participated in European and/or International collaborations and supported transfer and/or adoption of innovation? (X)

To a great extent - Experienced in collaboration and in sharing learning and / innovations. One or more good practices have been adopted, tailored or are informing practice in at least 2 other regions and in at least one other country.

As research and evaluation is a vital part of **transferring experiences and learnings**, the reference site has acted as a catalyst for spreading the adoption of evaluation mechanisms. Through an EU tender, the MAST model was developed in European collaboration, creating a structured framework for assessing the effectiveness and contribution to quality of care of telemedicine applications. Through the establishment of MAST, learnings were transferred and adopted, and MAST has been applied in many EU projects and to other regions around Europe such as Scotland, Catalonia, Friuli Venezia Giulia, Nordbotten and the Basque country. Learnings in regards to assisted living technologies and smart living has been adapted and transferred in numerous EU projects.

In regards to the RSD's experiences with the establishment of living labs, other regions have been inspired and in January 2016, the Kent Surrey Sussex Academic Health Science Network signed a contract with a regional Danish company Public Intelligence in order to – together with the Region – to transfer knowledge of the establishment and roll-out of Living Labs in health and social innovation. In addition from the EU project, Mastermind, a Market Place model developed has encouraged discussions, helped build relationships between colleagues and enabled detailed learning and knowledge transfer from Denmark to other regions in regards to eMental Health.

RSD has been an active region on the European scene, within eHealth and active ageing since 1997, where some of the first telemedicine European projects began, which were developed through programmes like CIP and INTERREG. The Southern Denmark EIP on AHA reference site partnership possess a substantial pool of knowledge within European programme work, and the partners have together participated in a large number of projects dealing with innovation, research, policy development, implementation practice and competence development within the FP 5 to FP7, CIP, H2020, Interreg, Public Health Programme, AAL, INTERREG, LLP and Erasmus.

The Region participates actively in EU networking activities in order share experiences and create mutual learning. Through a close collaboration with the region's office in Brussels; South Denmark European Office (SDEO), the region is actively involved in European networks like CORAL and ERRIN, where the region has leading roles as health working group leaders and founding members. SDEO takes active part in these networks and participate in the organisation of learning workshops, development of projects and policy formulations. The region has also recently become a member of the ECHAlliance, which is also a strategic collaboration partner of CORAL. ECHAlliance will through its model of eco-systems support the reference site.

Additionally, the Region is part of the Vanguard Initiative "New Growth through Smart Specialisation", which is a European initiative that is driven by a political commitment of regions to use their smart specialisation strategy for boosting growth. This is supported through the active involvement of Healthcare DENMARK, which is a governmental organization with a national and political mandate to promote Danish healthcare excellence.

SDEO which supports the reference site of Southern Denmark has organized an EIP on AHA upscaling workshop in 2015 and will together with the other regional Danish partners continue to host workshops specifically dealing with transfer and adoption of innovation.

Upload:

- *Personalised Telehealth in the Future*
- *Media release Living Lab in UK*
- *MAST from Wikipedia*
- *Newsletter MASTERMIND*

4.4 Criterion 4. Delivering evidence of impact against the triple win approach

To what extent does your region's commitment to age friendly and smart health and care solutions reflect the triple win approach? (X)

To a great extent - Solutions within active and healthy ageing and improved outcomes are matched by strong commitment to innovation and prevention to sustain economic growth. Evidence is available to support impact across the entire triple win approach.

In the Region of Southern Denmark, solutions within active and healthy ageing and improved outcomes are matched by **strong commitment to innovation and prevention to sustain economic growth**. The Region has a Smart Specialisation Strategy (S3), which is a strategic approach to economic development through targeted support for research and innovation and each year the Region invests more than € 24 million through EU funds (such European Social Fund and European Development Fund). The growth model is designed to catalyse innovation and to meet a triple win; to provide high quality health care, improve the efficiency of the health care system and strengthen the competitiveness for businesses. An evaluation of S3 has shown impressive results as there has **been a contribution to growth** of new markets, employment as well as a two-digit turn-over for health and social innovation enterprises (Evidence: <http://detgodeliv.regionsyddanmark.dk/publikation/effektmaaling-2015-2/>).

In regards to **a strategic approach to the coordination of care and services** towards the ageing population, the Region has in partnerships established strategic agreements on collaboration between sectors. The aim is higher quality, efficiency, and patient satisfaction, and better collaboration between all health and social care parties in the Region as well as supporting care pathways for patients and builds on the concept of LEON – lowest possible cost level – which means that the patient will receive the best and most efficient care possible without compromising the provision of healthcare. The Region participates in - and maintains strong stakeholder partnerships to drive innovation forward.

The Health Innovation Centre of Southern Denmark coordinates the effort and implementation and up-scaling of innovative services. The alliance in the reference site of the Region of Southern Denmark therefore consists of the quadruple helix representing the private companies (Welfare Tech), public facilitators (MedCom), research and education (the 2 university colleges in the region and the University of Southern Denmark and the Department of Sports Science and Clinical Biomechanics as well as the Centre for Active Living), and citizens (though user-panels established at CoLab Denmark) which is supported by an agreed structure and shared governance.

The strong regional focus on age friendly and smart health and care solutions and environments means that several services have been implemented and upscaled in the Region. Three of these are described in criterion 5. However, in order for an innovative service to be up-scaled, research is a prerequisite. The Region has evaluation tools as an integrated part of their deployment and implementation process of age friendly and smart health and care solutions (e.g. HTA and MAST). MAST was developed for the Commission and published in 2012 and has since then been used extensively in the evaluation of services.

Upload:

- 1. Letters of intent*
- 2. PPI stories*
- 3. OECD*
- 4. RSD Strategy*
- 5. Ecosystem as illustrated by Welfare Tech*

Criterion 5. Scale of demonstration and deployment of innovation Are there good practice examples of innovations?

Scale of demonstration and deployment (X) - Three or more good practice examples that meet the above criteria, plus evidence of large scale deployment for at least one of them

In the following **3 GPs will be described as they are** considered as good examples of upscaled innovation. The services have been demonstrated and deployed within the last 3 years and are transferable. All GPs link to the Pillar Care and Cure. There is a clear focus on the evidence and added benefit of the service – either in growth, efficiency or quality. The GPs have been implemented based on evidence and could only be implemented by the engagement of key stakeholders, such as a regional and national political commitment, as well as from the users of the service both health and care professionals as well as the citizens.

GP 1: Video-interpretation; Video remote interpreting (VRI) is a service that uses web cameras/video conference to provide sign- or spoken language interpreting services through a remote interpreter. The service supports the long-term sustainability and efficiency of health and social care systems as the business case has proven substantial savings <http://www.digst.dk/Digital-velfaerd/Rapporter-og-analyser/Sundhed/Analyse-af-oeget-brug-af-videotolkning-og-videomoeder>. Today the service is used in 90 % of all interpretations in the region and has been rolled out as a national project. <http://medcom.dk/projekter/basisaktiviteter/videotolkning>

GP 2: Telemedicine and COPD patients; Exacerbations of chronic obstructive pulmonary disease (ECOPD) are the most common cause for admissions and readmissions to medical wards worldwide. In 2010 an article concluded “In a hospitalised population with ECOPD, a nurse-led telemedicine video consultation is protective against early readmission and reduces the days of readmission.” Since then a larger trial was incorporated in the European project Renewing Health and since 2013, the service has been in daily operations carried in the Region. In the fall of 2015 a national roll-out of monitoring of COPD patients thus preventing hospitalisation has been decided, which was based on trials in several of the regions in Denmark, thus targeting all citizens with COPD in Denmark. <http://www.digst.dk/Digital-velfaerd/Initiativer-og-projekter/Landsdakkende-udbredelse-af-telemedicinsk-hjemmemonitorering-til-borgere-med-KOL>

GP 3: Guided cCBT for treatment of depression; The Region of Southern Denmark has since December 2013 rolled out cCBT computerised Cognitive Behavioural Therapy (cCBT) for patients suffering from a depression and more than 500 patients have received the service so far. Through the service citizens have gained easy access to the treatment of mild to moderate depression. It takes place in a combination of video consultation and interactive exercises in front of the computer from the comfort of the patient’s own home. Evidence behind suggest that computerized CBT is more effective than treatment as usual in treating depression/anxiety. See article attached and here <http://mastermind-project.eu/scientific-publications/>.

Other regions in EU have utilized this kind of service and therefore in 2014, a EU project was initiated to transfer experiences to other EU regions. Through targeted events and marketplace meetings, the regions have adapted the service to their own environment and services. The region has submitted a commitment to EIP on AHA specifically focusing on mental health and transferring the experiences gained here.

Upload:

1. *Sorknæs artikel COPD*
2. *Cognitive Therapy*
3. *Action group plan draft*
4. *Early telemedicine intervention*
5. *MASTERMIND Market place report*



The Region of Southern Denmark www.RegionSyddanmark.dk

Reference Site of the Region of Southern Denmark <https://syddanksundhedsinnovationeipaha.wordpress.com/>

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