# EIT Health
# Regional Innovation
# Scheme

# What is the EIT Regional Innovation Scheme?



The EIT Regional Innovation Scheme (EIT RIS) was created by the European Institute of Innovation and Technology (EIT) to close the gap between regions that are leaders in innovation and those regions which are progressing. The programme is implemented with the involvement of local Hubs. An EIT Hub is a local organisation selected by means of an open process to act as an interaction point between Knowledge and Innovation Communities (KICs) and local community stakeholders.

The network of EIT Health Hubs includes leading regional incubators, accelerators, prominent medical universities, research centres and institutes. These Hubs are located in 13 countries in Southern, Central and Eastern Europe.

In the field of healthcare, the programme has been developing since 2016, and it is co-ordinated by EIT Health InnoStars. The purpose of the programme is to promote healthcare innovation in countries with modest and moderate innovation capacity. The goal is to help citizens in less developed European countries enjoy the benefits of innovation – and develop and introduce new products and services supporting active ageing and healthy living. Additionally, its aim is to match healthcare innovators from the EIT Health network with the talent pool and innovative organisations from EIT Health RIS regions.

# What does the EIT Regional Innovation Scheme bring to the European innovation ecosystem and EIT Health Partners?
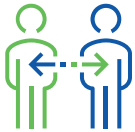
**Access to talents**

**Access to markets**

**Access to start-ups**

**Great research potential**

**Regional test-beds and living labs**

**Access to innovative ideas and project teams**

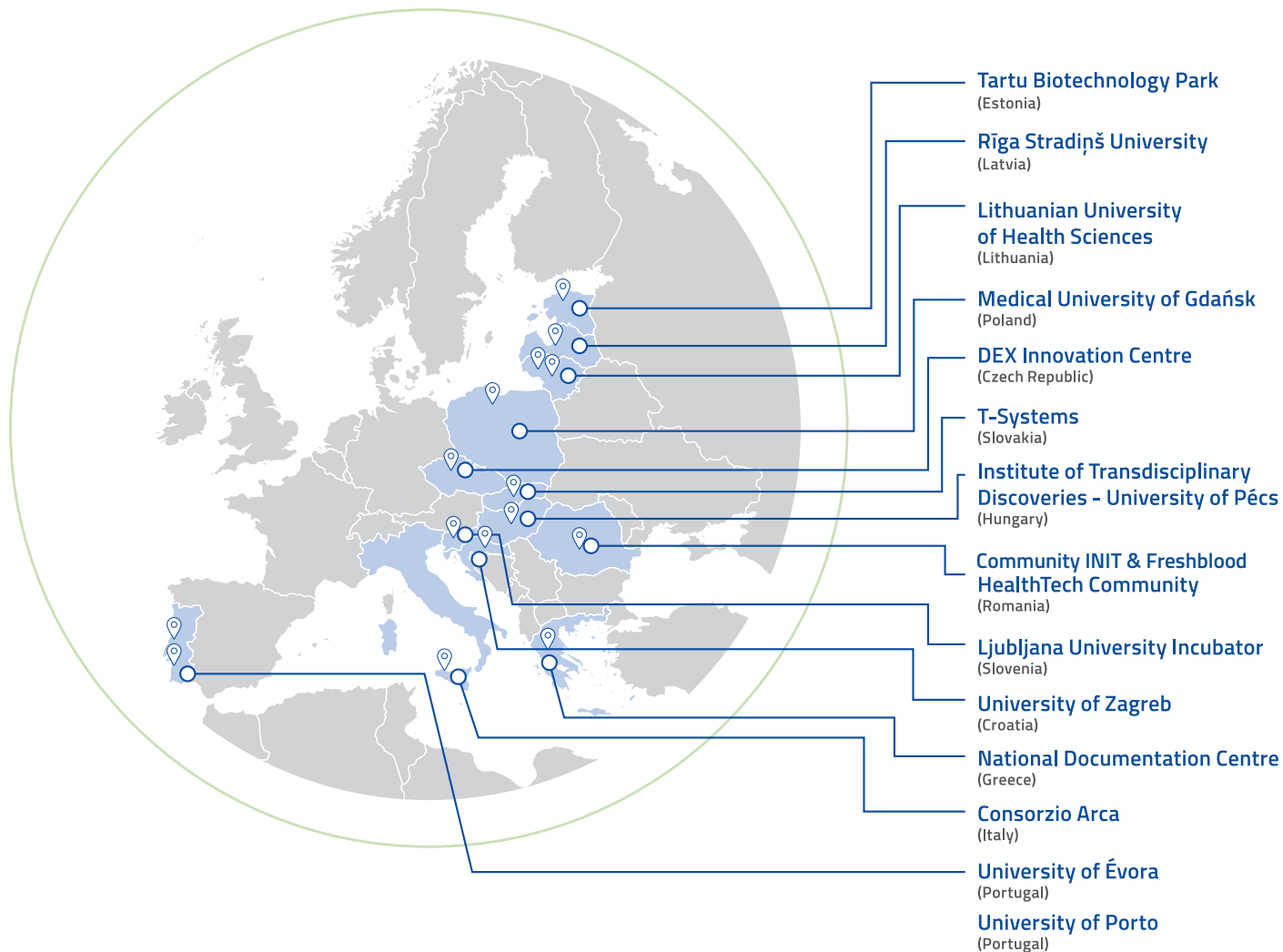**Access to external project partners**

## JOANNA BARANOWSKA
Medical University of Lodz, EIT Health Core Partner

*Co-operation within the RIS network brings us a lot of satisfaction, new contacts and experiences. We have had the opportunity of sharing our experiences and freshly-acquired knowledge, and we've systematised our approach in creating and managing innovation. We have similar backgrounds, have met interesting people and learnt how others solve similar problems. In our own example, we have been able to create a new standard in teaching innovation and entrepreneurship to medical students. Most importantly, the opportunity to teach others has turned out to be an opportunity for us to learn.*

# EIT Health Hubs

There are already 14 EIT Health Hubs established in 13 countries across Europe.



**Tartu Biotechnology Park**
(Estonia)

**Rīga Stradiņš University**
(Latvia)

**Lithuanian University
of Health Sciences**
(Lithuania)

**Medical University of Gdańsk**
(Poland)

**DEX Innovation Centre**
(Czech Republic)

**T-Systems**
(Slovakia)

**Institute of Transdisciplinary
Discoveries – University of Pécs**
(Hungary)

**Community INIT & Freshblood
HealthTech Community**
(Romania)

**Ljubljana University Incubator**
(Slovenia)

**University of Zagreb**
(Croatia)

**National Documentation Centre**
(Greece)

**Consorzio Arca**
(Italy)

**University of Évora**
(Portugal)

**University of Porto**
(Portugal)

Meet the EIT Health Hubs



## **TARTUB IOTECHNOLO GY PARK**

REGION
Estonia
Tartu, Estonia

POPULATION OF THE REGION
1 324 820

GDP IN THE REGION
€23 615 million



## **RĪGA STRADIŅŠ UNIVERSITY**

REGION
Latvia
Riga, Latvia

POPULATION OF THE REGION
1 919 968

GDPI N THE REGION
€27 033 million

# EIT HEALTH HUB LITHUANI A

(co-ordinated by Lithuanian University of Health Sciences [LSMU] – the Lead of the Hub and Kaunas University of Technology [KTU])

## REGION
North East Region
Kaunas, Lithuania

## POPULATION OF THE REGION
2 000 000

## GDP IN THE REGION
€25 014 million

# MEDICAL UNIVERSITY OF GDANSK

## REGION
Pomeranian Region
Gdansk, Poland

## POPULATION OF THE REGION
2 285 800

## GDP IN THE REGION
€27 257 million

Meet the EIT Health Hubs



# **DEX INNOVATION CENTRE**

## REGION
North East Region
Liberec, Czechia

## POPULATION OF THE REGION
1 507 209

## GDP IN THE REGION
€22 981 million



# **INNOVLAB,S LOVAKIA**

## REGION
Eastern Slovakia
Kosice, Slovakia

## POPULATION OF THE REGION
1 620 413

## GDP IN THE REGION
€18 045 million

# INSTITUTE OF TRANSDISCIPLINA RY DISCOVERIES, UNIVERSITY OF PÉC S

## REGION
South Transdanubia Region
Pécs, Hungary

## POPULATION OF THE REGION
933 800

## GDP IN THE REGIO N
€7 479 million



# ASOCIATIA INIT AND FRESHBLOO D HEALTHTECH COMMUNIT Y

## REGION
North West Romania
Cluj, Romania

## POPULATION OF THE REGION
2 576 777

## GDP IN THE REGION
€22 114 million

Meet the EIT Health Hubs

**Sveučilište u Zagrebu**
University of Zagreb

# UNIVERSITY OF ZAGREB - UNIZG

## REGION
Continental Croatia
Zagreb, Croatia

## POPULATION OF THE REGION
2 939 900

## GDP IN THE REGION
€33 240 million

LJUBLJANSKI UNIVERZITETNI **INKUBATOR**

# LJUBLJANA UNIVERSITY INCUBATOR (LUI)

## REGION
Western Slovenia
Ljubljana, Slovenia

## POPULATION OF THE REGION
933 800

## GDP IN THE REGION
€24 306 million

# CONSORZIO ARCA

## REGION
Sicily
Palermo, Italy

## POPULATION OF THE REGION
5 029 675

## GDP IN THE REGION
€88 112 million



# NATIONAL DOCUMENTATION CENTRE

## REGION
Attica
Athens, Greece

## POPULATION OF THE REGION
3 756 453

## GDP IN THE REGION
€85 285 million

Meet the EIT Health Hubs



UNIVERSIDADE DE ÉVORA

# UNIVERSIDADE DE ÉVOR A

REGION
Alentejo
Évora, Portugal

POPULATION OF THE REGION
718 087

GDP IN THE REGIO N
€12 736 million

U. PORTO

# UNIVERSITY OF PORTO

REGION
North Portugal
Porto, Portugal

POPULATION OF THE REGION
3 689 173

GDP IN THE REGIO N
€57 241 million

# The EIT Regional Innovation Scheme impact

EIT Health RIS activities are focused on two main areas of action: the involvement of RIS stakeholders in EIT Health programmes and the development of local innovation ecosystems in the regions, through the dissemination of the knowledge triangle integration model.

**14**
**EIT Health Hubs**

**13**
**countries**

**100**
**participants**
in EIT Health Campus Programmes in 2019

**700**
**students** participating in Innovation Days in RIS regions in 2019

**220+**
**executives and professionals**
participating in EIT Health RIS training programmes in 2019

**12**
**supported innovation projects in 2019**

**50+**
**supported start-ups in 2019**

# Top EIT Health RIS projects in 2019

## EIT Health RIS Innovation Call 2019

In 2019, RIS launched its first **EIT Health RIS Innovation Call 2019** in the search for innovative and promising local projects in the field of health-care in the emerging regions. The main aim was to identify and find high-quality, strong, balanced projects, targeting EIT Health Focus Areas such as bringing care home or harnessing the power of Real World Data. One of the criteria was that the project needed to be developed by well-settled consortia comprising local actors, including both academic and non-academic partners in collaboration with EIT Health Hubs.

## Setting the basis for future innovation projects in the region

The goal of this activity was to support projects from the RIS regions and provide funding for the preparation phase; this can help in developing local innovation projects to the maturity level, that meets the application conditions of the EIT Health Business Plan 2021 Innovation Calls.

**104**
Received applications

**84**
Passed formal checks

**46**
Evaluators

**12**
Selected projects
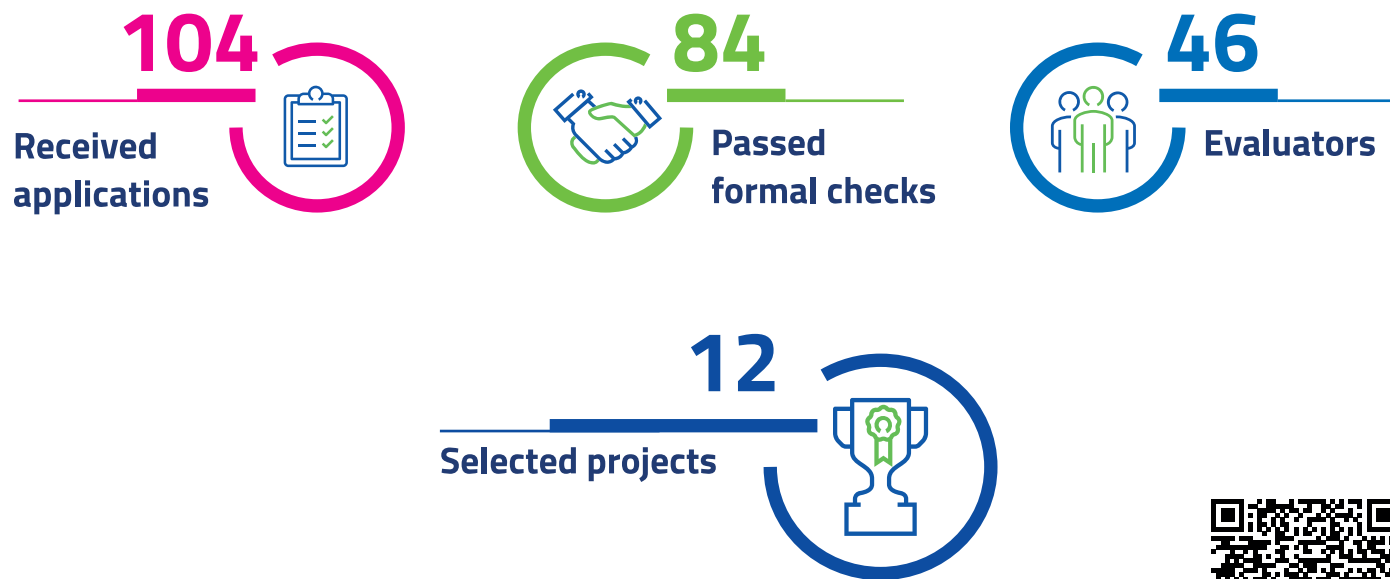
Best projects selected in the EIT Health RIS Innovation Call 2019

# Projects receiving grants in the EIT Health RIS Innovation Call 2019 by Focus Area

**33%**
**Big Data / Cloud**

**17%**
**Mobile app**

**17%**
**Wearable device**

**33%**
**New technologies**

---
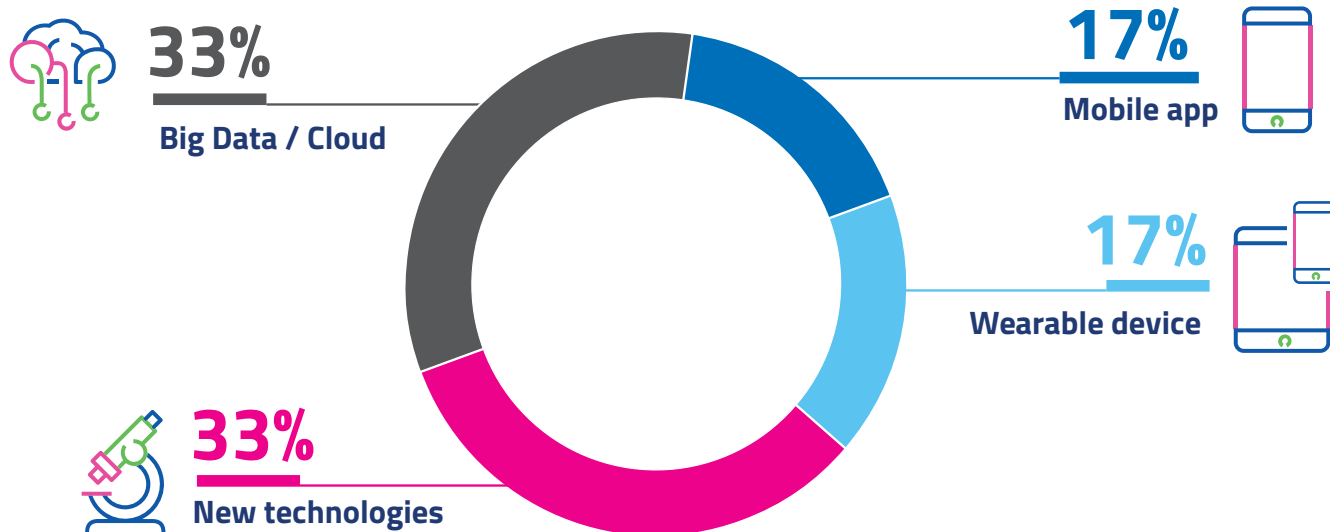
## SIMONA BREZAR

a member of HomeCare 2020, a selected project in EIT Health RIS Innovation Call 2019

*The RIS innovation programme is very useful for us too because of the opportunity of being engaged with the EIT Health network and its activities (workshops, partner meetings), being part of a research consortium, developing valuable solutions for the healthcare market and enjoying the benefits of innovation.*

# 12 healthcare innovation teams looking for partners

## Romania, Cluj Napoca 7

InnoHealth: An innovative robotic system for upper limb rehabilitation

## Croatia, Zagreb 8

KneEMG: Personal electromyograph for knee rehabilitation

## Croatia, Zagreb 9

COM2LLD: Solution for an indirect measurement of the leg length by tracking the body mass centroid position

## Slovenia, Ljubljana 10

LifeECG: Remote atrial fibrillations detection with full EKG signal to the cloud

## Greece, Athens 11

PredictOHSS: An app that addresses the clinicians' need for an individualised prediction check-point of severe ovarian hyperstimulation syndrome based on each patient's profile

## Slovenia, Ljubljana 12

NEUS: software solution for detecting mild cognitive impairment
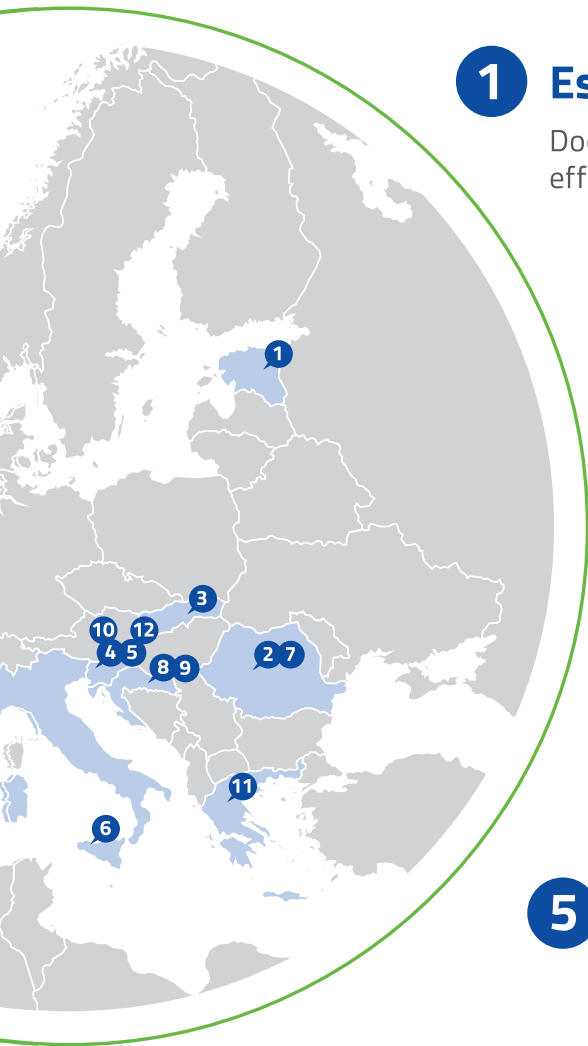
## 1 Estonia, Tartu

DocuMental: EHR optimisation for improving clinical efficiency in psychiatry

## 2 Romania, Cluj Napoca

Lung cancer Diagnosis and Monitoring System based on transthoracic ultrasonography and neural networks

## 3 Slovakia

STEMI: Connecting virtually
*paramedic - doctor - dispatch operator*
to save time when diagnosing stroke
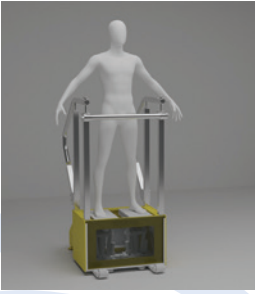
## 4 Slovenia, Ljubljana

PVR System: A device that addresses peripheral arterial disease in patients with diabetic foot ulcer (DFU)

## 5 Slovenia, Ljubljana

HomeCare 2020: A device which monitors activities of elderly people to detect emergency situations
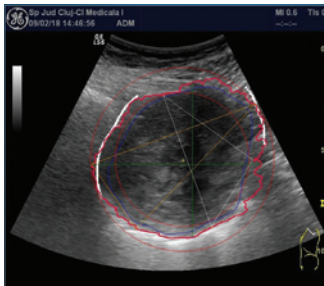
## 6 Italy, Palermo

Patient: specific device for Abdominal Aortic Aneurism (AAA) with Additive Manufacturing (AM)

# COM2LLD (Zagreb)

- S    tatistics have shown that up to 90% of the population suffers from leg-length discrepancy (LLD).
- A    n analytical study conducted on available publications has established a connection between musculoskeletal disorder problems and LLD.
- A    study shows that each EU country spends on average €1 billion  in costs (work and health) on people with LLD.
- T    he COM2LLD solution introduces an indirect measurement of the leg length by tracking the body mass centroid position.
- T    he complete body posture is measured by a vision device while tracking the targeted anatomical points.
- B    y processing this data, the programme changes the configuration of the movable platforms to achieve the displacement of the centre of the body mass to the desired position where both lower extremities are equally loaded.

# Lung cancer Diagnosis and Monitoring System based on transthoracic ultrasonography and neural networks (Cluj Napoca)

- D    ue to late detection, only 15% of patients suffering from lung cancer survive for five years after diagnosis.
- R    ecently published data estimates an increase in lung cancer deaths worldwide from 1.6 million in 2012 to 3 million in 2035.
- T    he consortium plans to tackle this issue with a standardised non-invasive early detection test procedure using transthoracic ultrasonography (TUS) based image analysis, helping to decide whether a lesion has a benign or malignant character.

# STEMI: Saving minutes, Adding life in Europe and beyond (Kosice)

- C    ardiovascular diseases (CVDs) cause 1.8 million deaths in the EU every year.
- The time between the onset of symptoms and treatment in hospital is the main factor affecting both short- and long-term mortality and morbidity of STEMI (ST-Elevation Myocardial Infarction), stroke and severe Trauma patients' top three most time-critical cases.
- This project aims to save crucial time in diagnosing stroke, severe Trauma and Myocardial Infarction in the pre-hospital phase by virtually connecting a paramedic doctor dispatch operator via a software solution available in app form and on the internet.

*Evaluators pointed out that the usefulness of carboxytherapy in the treatment of DFU that has been previously reported, looks well founded and feasible.*

# PVR System (Ljubljana)

- A    ccording to the WHO, the number of people with diabetes rose from 108 million in 1980 to 422 million in 2014.
- B    etween 12% and 24% of patients with diabetes develop diabetic foot ulcers (DFU)
- A    third of ulcers fail to heal and lead to amputations. Meta analysis of 19 studies showed that roughly 40% of patients have a recurrence within one year of the ulcer healing.
- C    urrent solutions fail because they do not sufficiently tackle the root issue of impaired wound healing process in the poor blood circulation in the feet of those affected
- P    VR system is a device that addresses peripheral arterial disease in patients with DFU to achieve faster healing time, improved nutritive blood perfusion in the foot and non-invasive prevention, using safe and controlled transcutaneous applications of $CO_2$ to the lower extremities.
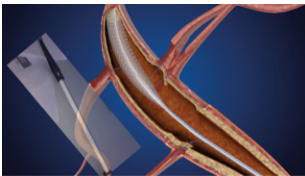
*The evaluators pointed out that the planned deliverables can have a remarkable impact on health care. One evaluator wrote, "This is a high-quality, strong and balanced project targeting EIT Health focus areas that promote the development of the local innovation ecosystem in RIS region".*

# HomeCare2020 (Ljubljana)

- A   lack of independence causes the elderly to move into nursing homes sooner than they would need to under normal circumstances  and visit doctors more often.

- This puts a burden on social and health-care systems with over-crowded nursing homes and hospitals, which causes higher health-care expenditures.

- The Homecare2020 project tries to solve this issue with a combination of a tablet computer which offers, for example, emergency calls, notifications and reminders, smart-home  management, care documentation, and information to carers, and a smart wristband which works anywhere outside and automatically monitors behaviour (activity levels), detects dangerous situations ( e.g. falls), enable alerts anywhere. The device also has along battery life.

*All evaluators have given maximum points for the adopted methodology and praised the level of readiness and qualification of its team members to execute the objectives.*

# Patient specific device for Abdominal Aortic Aneurism (AAA) with Additive Manufacturing (AM) (Palermo)

- O   pen-surgery therapies are currently the only treatment options available for Abdominal Aortic Aneurism. This reduces the survival rate of patients by 20% due to unavoidable post-surgery complications.

- ANEURIS is an innovative endoprostesis which allows endovascular treatment to replace open surgery. It uses Additive Manufacturing (3D printing) Technology which:

  - s   hortens the production time by 75%;

  - r   educes surgery time by 75%

  - implifies surgical procedure by 60%.

- ANEURIS has received positive written feedback from more than 10 vascular surgeons, as well as from more than five device resellers.

*All evaluators have given maximum scores for their methodology and praised it for its great solution and great potential impact.*

# An innovative robotic system for upper limb rehabilitation InnoHealth (Cluj Napoca)

- U pper limb impairment affects between half and three quarters of stroke survivors.

- This is combined with a serious shortage of care-givers (the United Kingdom in 2013 approximately 77 000; France in 2012 approximately 19 000; Belgium in 2013 approximately 7 500).

- The InnoHealth consortium aims to develop an innovative modular rehabilitation robotic system designed for post-stroke patients with impaired upper limb, consisting of three robotic modules.

- Each module is exoskeleton, with adjustable elements to cover the 95% of the population. It brings cost efficiency, distinct functionality and easier maintenance by modularity and reconfigurability.



*Evaluators gave maximum scores on the project feasibility and praised its highly-qualified team.*

# KneEMG Personal electromyograph for knee rehabilitation (Zagreb)

- K nee injuries occur in both sexes and across all age groups.

- O ne of the consequences of a knee injury is atrophy of the quadriceps muscle.

- K neEMG is a biofeedback device which measures electromyographic signals from multiple muscles in the knee, and performs analyses to estimate muscle activity and muscle fatigue in real time.

- The user receives immediate feedback as to whether the exercise is being performed correctly.

- The device is supported by cloud infrastructure which enables a remote supervisor (such as a physician) to provide instructions on necessary changes in the method or regime of training.

*One evaluator wrote, "The added value is its affordability, its home-based strategy and the chances of correcting the exercise in real time".*

# DocuMental

## EHR optimization for improving clinical efficiency in psychiatry (Tartu)

- Around 70% of people with mental health disorders are misdiagnosed initially and remain misdiagnosed for an average of 5 to 7.5 years; additionally, the WHO estimates that 35% - 50% of people with severe mental disorders receive no treatment.

- DocuMental is an online decision-supporting tool to assist with patients in three steps:
    1. Diagnostic module: digitised, structured with a 'tick-box' choice
    2. Treatment module: a full list of registered psychotropic medications, together with their doses
    3. History and routine assessment modules. DocuMental also provides access for patients to the web portal to support bilateral communication with mental health teams and services.

The evaluators praised the project for its appropriate methodology and for its high level of solution readiness.

*Evaluators noted that the team has already been working together successfully on projects; one wrote, "The proposal is extremely well thought-through and brings much value to a clinical problem where solutions have not changed for many years".*

## LifeECG Remote AF detection with full EKG signal to the cloud (Ljubljana)

- ECG is recorded by patients only with a time delay after the patients come to the physicians.

- Measurements are short-term, typically covering a few seconds to a day or two; vital abnormalities are often missed.

- Non-detected atrial fibrillations (AF) and other cardiac defects result in higher risk for complications and stroke, and decrease the possibility of survival. There were an estimated 33.5 million affected individuals in 2010 and this number is growing.

- LifeECG is a cloud service that is integrated with a mobile ECG device and allows a unique non-stop 24/7 live streaming of ECG recordings, together with detected heart abnormalities.

- The solution is cost-effective, has customisable storage of ECG recordings for further data analytics (AI), open via standardised interfaces for integration with other ECG devices, services and HIS, flexible in deployment scenarios (cloud, on premise) and secure by design.

*One evaluator said, "It is clear to notice a solid demonstration of a potential pathway (regulatory, reimbursement) to reach patient care within the desired timeframe in order to also scale and commercialise it."*

LifeECG

# PredictOHSS (Athens)

- I n Europe, approximately 780 000 IVF treatment cycles are performed annually.

- OHSS (Severe ovarian hyperstimulation syndrome) is a serious complication affecting women undergoing in vitro fertilisation (IVF) treatment.

- I t is associated with mortality, with a reported frequency of three deaths per 100 000 women undergoing ovarian stimulation; 2 040 cases of severe OHSS were reported in Europe in 2014.

- The "PredictOHSS" app aims to address clinicians' need for an individualised prediction check-point of severe OHSS based on each patient's profile.

- The model requires the input of four values measured three days after egg retrieval. The output is the % probability of a specific patient developing severe OHSS.

# NEUS (Ljubljana)

- M ild cognitive impairment (MCI) is a precursor to Alzheimer's disease (AD) which is the most common form of dementia; it contributes to 60% - 70% of cases.

- There is currently no cure for dementia, yet in the very early stages, existing therapies can improve and prolong the cognitive function.

- N EUS is a software solution for detecting MCI. It combines eye-tracking technology, digitalised neuropsychological tests with an AI-based decision support system.

- O ther solutions either require the presence of a neurologist, are more costly or do not give results in real time.



PredictOHSS

*Evaluators praised the project for its logical methodology,  its well-defined work packages and implementation plan.*

*All evaluators gave a maximum score for their methodology, one wrote, "The proposed solution is novel. Offering it in subscription model will be additionally beneficial. The project will be implemented in partnerships that already have experience in collaboration, which increases the chances of success".*



neus™
eye-tracking
neurodiagnostics

# What stakeholders think about the EIT Health Regional Innovation Scheme

## ROXANA RUSU-BOTH

a member of UTCN Lung Cancer Diagnosis, an awarded team in EIT Health RIS Innovation Call 2019

*The RIS innovation programme represents a big opportunity by supporting the development of our AI health-care project in order to reach a higher maturity level, and also, by giving us the possibility to meet other research partners to discuss ideas and collaborations.*



## VIDA GROZNIK

PhD, a member of  NEUS Diagnostics, an awarded team in EIT Health RIS Innovation Call 2019

*The collaboration with high-level expertise RIS partners and their developed network, together with received funding, will facilitate NEUS in upgrading its diagnostic model to tackle the problem of late detection of dementia and bring the solution a step closer to doctors, patients and their families.*

## JAKOB GAJSEK
### EIT Health Hub representative, CEO Ljubljana University Incubator

*The study visit to Oxford was very enlightening. I learnt a great deal about technology and innovation transfer, and how the innovation community in Oxford works. I especially liked the lecturers who were actually involved in the spin-out companies they were talking about, and that most, if not all, had real business experience.*

## DÁVID BREITENBACH
### Business Development Executive, Sineko Global Ltd., a start-up competing in InnoStars Awards Programme

*The programme proved to be a great journey whereby international mentors helped us develop, fun and interactive workshops showed us the way how to pitch and EIT's undeniable professionalism supported us in the product development process. Furthermore, the programme provides us with the chance of great networking opportunities, and business and financial support as well.*



## NERINGA ŠEPERIENĖ
### CEO, Co-founder, BrachyDOSE, a start-up competing in InnoStars Awards Programme

*We had a great experience at EIT Health's InnoStars Award bootcamp. Working on pitching, expression and presentation skills were very helpful for us. We also met inspiring people and had the opportunity to present our product to future investors. BrachyDOSE undoubtedly became stronger and more prepared to enter the med-tech market.*

## GÁBOR TÓTH
### CEO, Co-founder of Insimu Patient, a start-up competing in InnoStars Awards Programme

*We found the InnoStars programme of EIT Health an exceptionally unique programme in the rough ocean of start-up ecosystems and health care. It provides early-stage start-ups with what they need the most: a flexible attitude, a network specific to their product, and passionate, experienced mentors of their choice. I would highlight that the short time for spending the grant and demonstrating results turned out to be a great and beneficial push. I call it another way of accelerating development. The fantastic team of programme organisers achieved a remarkable and rare balance. They provided all the help when help was needed, but they also let us explore our visions in the way we had imagined.*

## VIDA GROZNIK
### PhD, Neus Diagnostics, a team participating in an innovation project development training

*The structure of the programme and the way you were able to bring us from the basic idea of the project to thinking about every aspect of the business and the solution was mind-blowing. I also admired the way you were able to give each and every one of us relevant comments about our solutions and what we should be watching out for.*

## DANIELA TRUDE N
### Director of Derma Art, a team participating in an innovation project development training

*The EIT Health programme was incredibly helpful in the development of our project. The workshops helped us focus on the key elements of our project to achieve more efficient and faster development, and the grant will help us advance the project more quickly.*

# Would you like to learn more about the EIT Regional Innovation Scheme?



Reach out to EIT Health Hubs through the InnoStars RIS team! Contact us: **innostars.ris@eithealth.eu**

eit | Regional Innovation Scheme

eit Health | InnoStars

EIT Health is supported by the EIT, a body of the European Union