

WEBINAR

Advancing Stroke Care: Prevention, Treatment, and Rehabilitation

 04.06.2025  10:00 am Host: SYNYO GmbH

Guest project presentations:

THCS, POC4TRIAGE, EQL Stroke, PEER-HOMEcare

MDR in AIS 



This project is part of the European Partnership on Transforming Health and Care Systems (THCS), which has received funding from the European Union under the Horizon Europe Framework Programme – Grant Agreement No. 101095654 (FFG grant agreement No. 50773503).

Agenda

Key information

Time	Topic	Presenter
10:00 - 10:05	Welcome and introduction to the webinar and its objectives	<i>Alexander Nikolov</i> SYNYO GmbH
10:05 - 10:20	Overview of the THCS Partnership	<i>Ewoud van der Wal</i> THCS Program manager
Stroke care, prevention and rehabilitation		
10:20 - 10:30	POC4TRIAGE Key highlights and contributions to stroke care and prevention	<i>Hannes Perko</i> Senior Research Engineer at Austrian Institute of Technology
10:30 - 10:40	MDR in AIS Advancements in the treatment of ischemic stroke patients	<i>Alexander Nikolov</i> SYNYO GmbH
10:40 - 10:50	EQL Stroke Rehabilitation innovations	<i>Signe Tomsone</i> Associate Professor, Department of Rehabilitation, Riga Stradiņš University
10:50 - 11:00	PEER-HOMEcare Rehabilitation innovations	<i>Guna Berzina</i> Department of Rehabilitation, Riga Stradiņš University
11:00 - 11:30	Q&A session and audience interaction	<i>Alexander Nikolov</i> SYNYO GmbH
11:30	Closing remarks	<i>Alexander Nikolov</i> SYNYO GmbH

HOUSEKEEPING RULES



The session will be **entirely recorded** and published on the MDR in AIS project website.



All participants except speakers and moderators will be **muted by default**.



Feel free to post your questions in the **chat**.



If you would like to **speak, raise your hand** and wait for the moderator to give you the floor.



TRANSFORMING HEALTH
AND CARE SYSTEMS

EU Partnership Transforming Health and Care Systems (THCS)

Ewoud van der Wal - THCS Joint Call Secretariat



PILLAR 1:
Excellent
Science

PILLAR 2:
Global
Challenges
&
European
Industrial
Competitiveness

PILLAR 3:
Innovative
Europe

Overview of 49 European Partnerships

HORIZON EUROPE PILLAR II - Global challenges & European industrial competitiveness

CLUSTER 1: Health	CLUSTER 4: Digital, Industry & Space	CLUSTER 5: Climate, Energy & Mobility	CLUSTER 6: Food, Bioeconomy, Agriculture, ...
Innovative Health Initiative	Key Digital Technologies	Clean Hydrogen	Circular Bio-based Europe
Global Health Partnership	Smart Networks & Services	Clean Aviation	Rescuing Biodiversity to Safeguard Life on Earth
Transformation of health systems	High Performance Computing	Single European Sky ATM Research 3	Climate Neutral, Sustainable & Productive Blue Economy
Chemicals risk assessment	European Metrology (Art. 185)	Europe's Rail	Water4All
ERA for Health	AI-Data-Robotics	Connected and Automated Mobility (CCAM)	Animal Health & Welfare*
Rare diseases*	Photonics	Batteries	Accelerating Farming Systems Transitions*
One-Health Anti Microbial Resistance*	Made in Europe	Zero-emission waterborne transport	Agriculture of Data*
Personalised Medicine*	Clean steel – low-carbon steelmaking	Zero-emission road transport	Safe & Sustainable Food System*
Pandemic Preparedness* Co-funded or co-programmed	Processes4Planet	Built4People	
	Global competitive space systems**	Clean Energy Transition	
		Driving Urban Transitions	

- Institutionalised Partnerships (Art 185/7)
- Institutionalised Partnerships / EIT KICs
- Co-Programmed
- Co-Funded

* Calls with opening dates in 2023-24

** Calls with opening dates not before 2022

PILLAR III - Innovative Europe

EIT (KNOWLEDGE & INNOVATION COMMUNITIES)	SUPPORT TO INNOVATION ECOSYSTEMS
InnoEnergy	Innovative SMEs
Climate	
Digital	
Food	
Health	
Raw Materials	
Manufacturing	
Urban Mobility	
Cultural and Creative Industries	

CROSS-PILLARS II & III

European Open Science Cloud

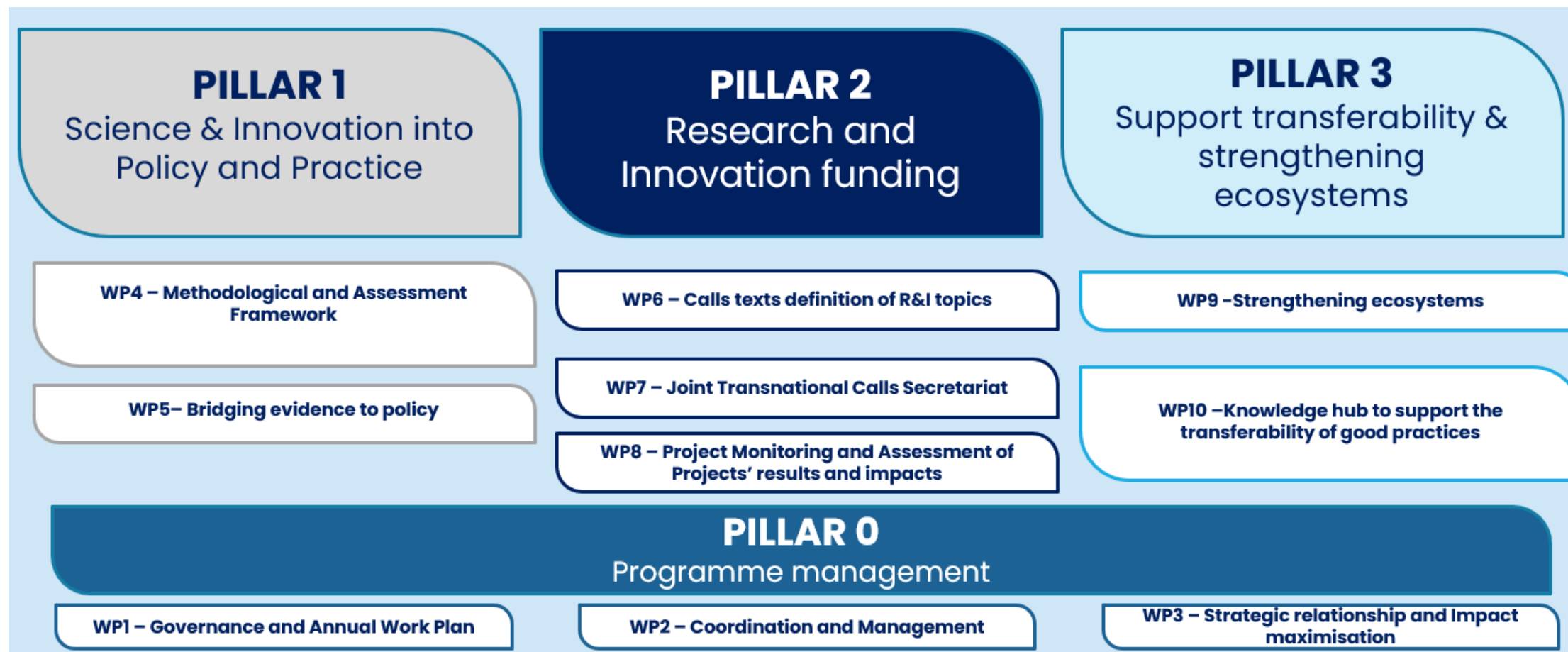


Start: January 2023
Duration: 7 years

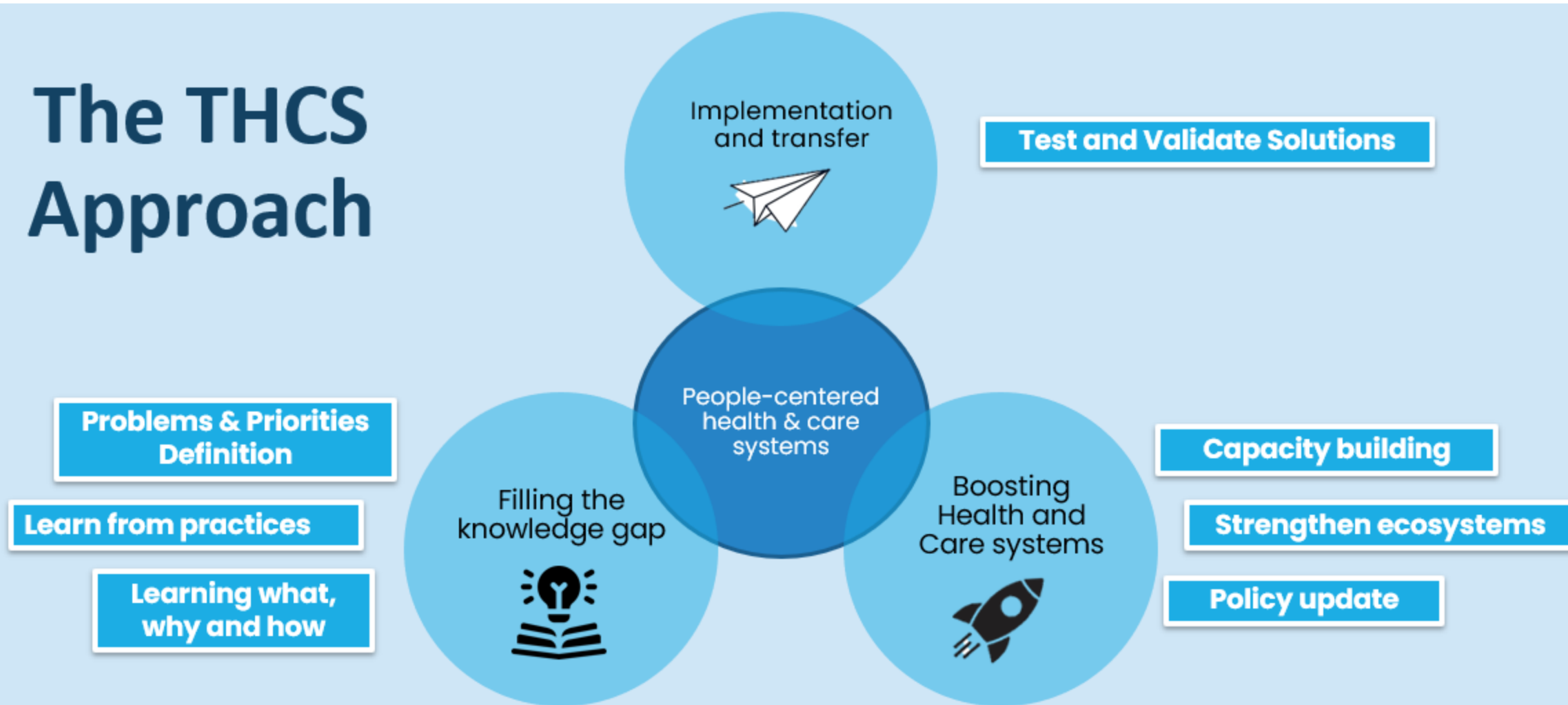


- **63 partners**
- **23 Member States and HE Associated Countries**
- **Switzerland, the United States and the UK**
- **9 regions**

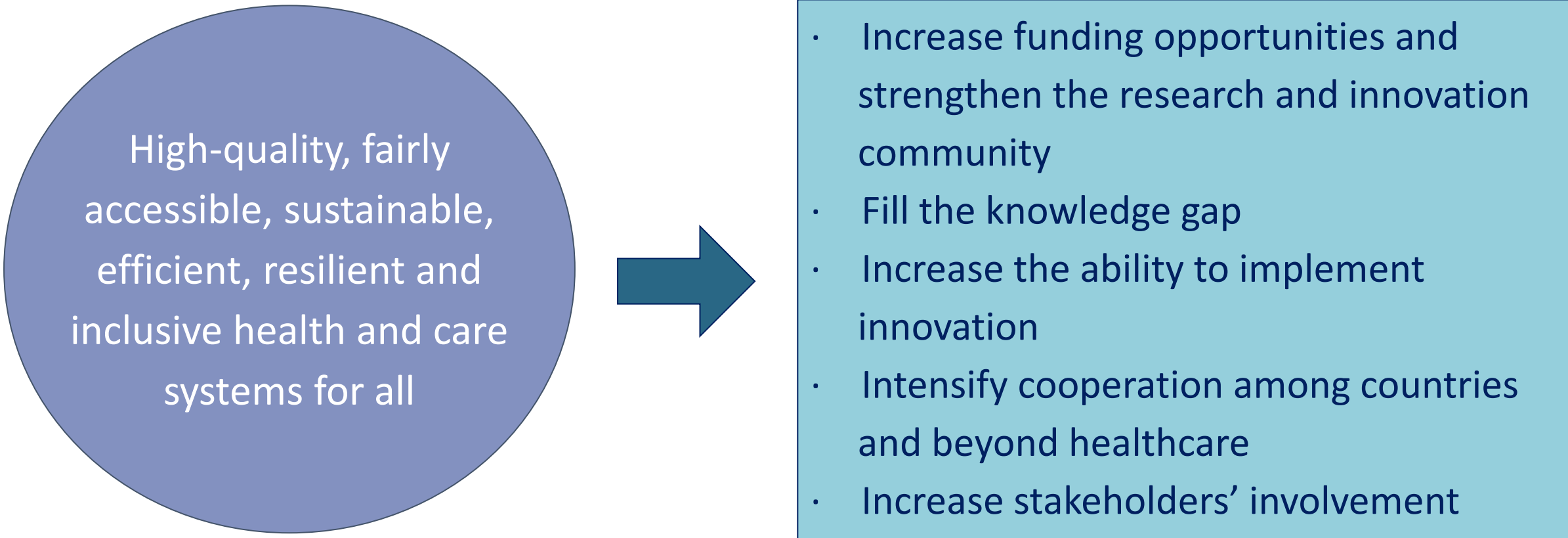
Pillars and Work Packages



The THCS Approach



THCS Vision and Objectives



High-quality, fairly accessible, sustainable, efficient, resilient and inclusive health and care systems for all

- Increase funding opportunities and strengthen the research and innovation community
- Fill the knowledge gap
- Increase the ability to implement innovation
- Intensify cooperation among countries and beyond healthcare
- Increase stakeholders' involvement

THCS Expected outcomes

Stronger local and regional ecosystems

Researchers engaged in collaborative research at international level

H&C authorities and policy makers use research results in decision making

Better cooperation among Countries in this R&I field

H&C authorities, policymakers plan and carry out efficient investments

H&C providers and professionals implement innovative solution

JTC 2023 “Healthcare of the Future”



To provide the necessary knowledge to build the health and care of the future and support the implementation of innovative solutions on a larger scale.



> 30 millions €



36 funders

JTC 2024 “Innovate to Prevent”



To support the implementation of innovative person-centred health and care models addressing prevention strategies, with the key help of existing IT and digital technologies and services, as well as existing and emerging data.



> 34 millions €



31 funders



To fund research and innovation projects that strengthen primary and community health and care systems and provide policy and decision makers with the necessary knowledge and tools to govern the transitions needed in the primary and community care sector

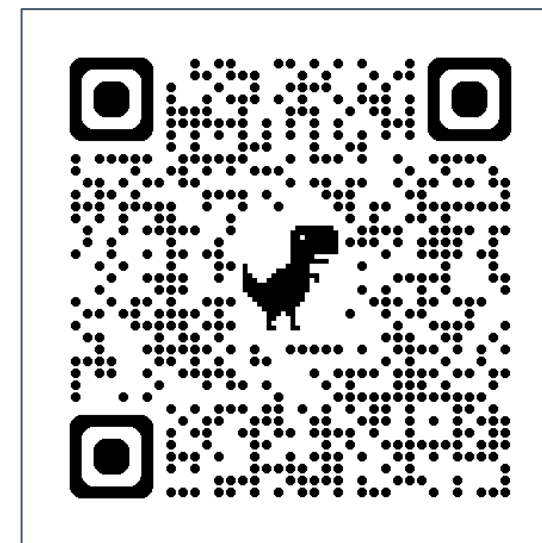


> 32 millions €



32 funders

Discover the Impact
Assessment of the
Joint Transnational
Call 2023



Enter your title here

Enter your subtitle here

CONTACT DETAILS



www.thcspartnership.eu



www.linkedin.com/in/thcs



www.youtube.com/@THCS-HorizonEU



coordination@thcspartnership.eu



Questions & Answers



POC4TRIAGE

Point-of-Care Devices for Urgent Care Triage

AIT Austrian Institute of Technology

Hannes Perko | Senior Research Engineer

Webinar

4.6.2025



This project is part of the European Partnership on Transforming Health and Care Systems (THCS), which has received funding from the European Union under the Horizon Europe Framework Programme – Grant Agreement No. 101095654 (FFG grant agreement No. 50773503).



- Programme: Horizon Europe
- Call: HORIZON-HLTH-2023-TOOL-05-05 - Harnessing the potential of real-time data analysis and secure Point-of-Care computing for the benefit of person-centred health and care delivery (Tools and technologies for a healthy society, Single stage - 2023)
- Type of action: Innovation Actions
- Submission: 13 April 2023
- Total Budget: approx. € 10 Mio (1244 PM, 103 PY)
- #Partners: 18
- Lead: University Of Turku

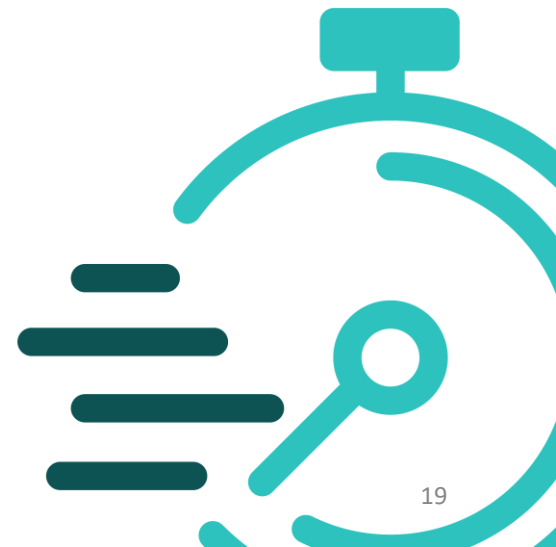
1. Develop and validate functionality of compact, robust, fast, accurate and energy efficient **point-of-care (POC) devices in urgent care settings** such as ambulance, ER and ICU.
2. To develop and apply novel **AI-driven edge-computing algorithms** for POC devices to **facilitate patient triaging**.
3. To **develop and validate secure Device-Hospital connectivity platform (DHCP)** with AI-based multimodal edge computing prediction algorithms, able to integrate POC device data and facilitate better triaging to nearby urgent care facilities.
4. To perform **clinical validation of POC devices** and DHCP for triaging in urgent care settings.
5. **Cost-effectiveness analyses and exploitation** of POC4TRIAGE results.

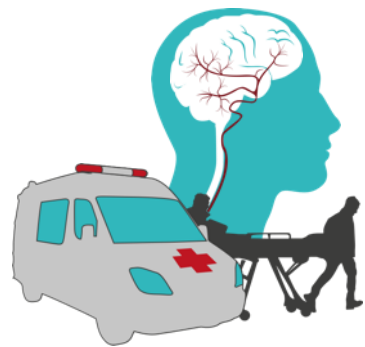
Consortium

#	Organisation Name	Country
1	University Of Turku	Finland
2	Uppsala University Hospital	Sweden
3	Austrian Institute of Technology	Austria
4	Academisch Medisch Centrum bij de Universiteit van Amsterdam	The Netherlands
5	Ben Gurion University	Israel
6	University of Oulu	Finland
7	Fundació Eurecat	Spain
8	Hospital Universitari Vall d'Hebron Spain	Spain
9	TrianecT	The Netherlands
10	ICTerra	Turkey
11	NEC Italy	Italy
12	NEC Laboratories Europe	Germany
13	Organic Electronics Saxony	Germany
14	LUPISE	France
15	European Biomedical Research Institute of Salerno	Italy
16	Stroke Alliance For Europe	Belgium
17	Allm EMEA GmbH	Germany
18	Ars Accessus Medica BV	The Netherlands



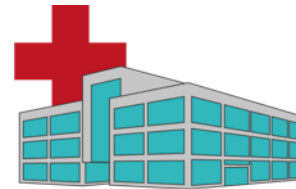
LVO Stroke Triage with sub-hairline EEG and fNIRS





LVO stroke triage
cannot be performed
In the **ambulance**

>1.2 Million /
Year
In Europe

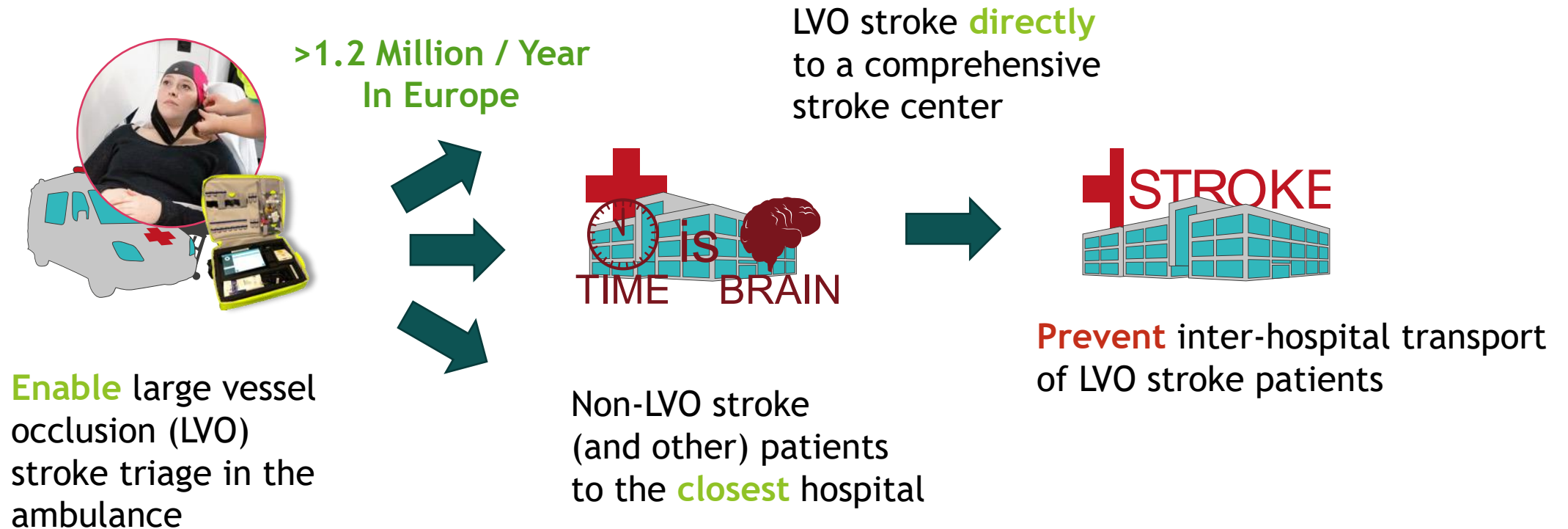


All suspected stroke
patients transported
to the **closest** hospital

60-75 minute
treatment delay



54% of LVO stroke patients have
to be **transported again** to a
comprehensive stroke center



AI model objective

Detect large vessel occlusion (LVO) stroke using short-term EEG and fNIRS signals acquired in prehospital ambulance settings.

Key challenges

- Limited availability of EEG/fNIRS data collected in ambulance environments
- Very short acquisition times (typically 2-3 minutes)
- Emergency context can lead to signal variability, motion artifacts, and electrode dropouts

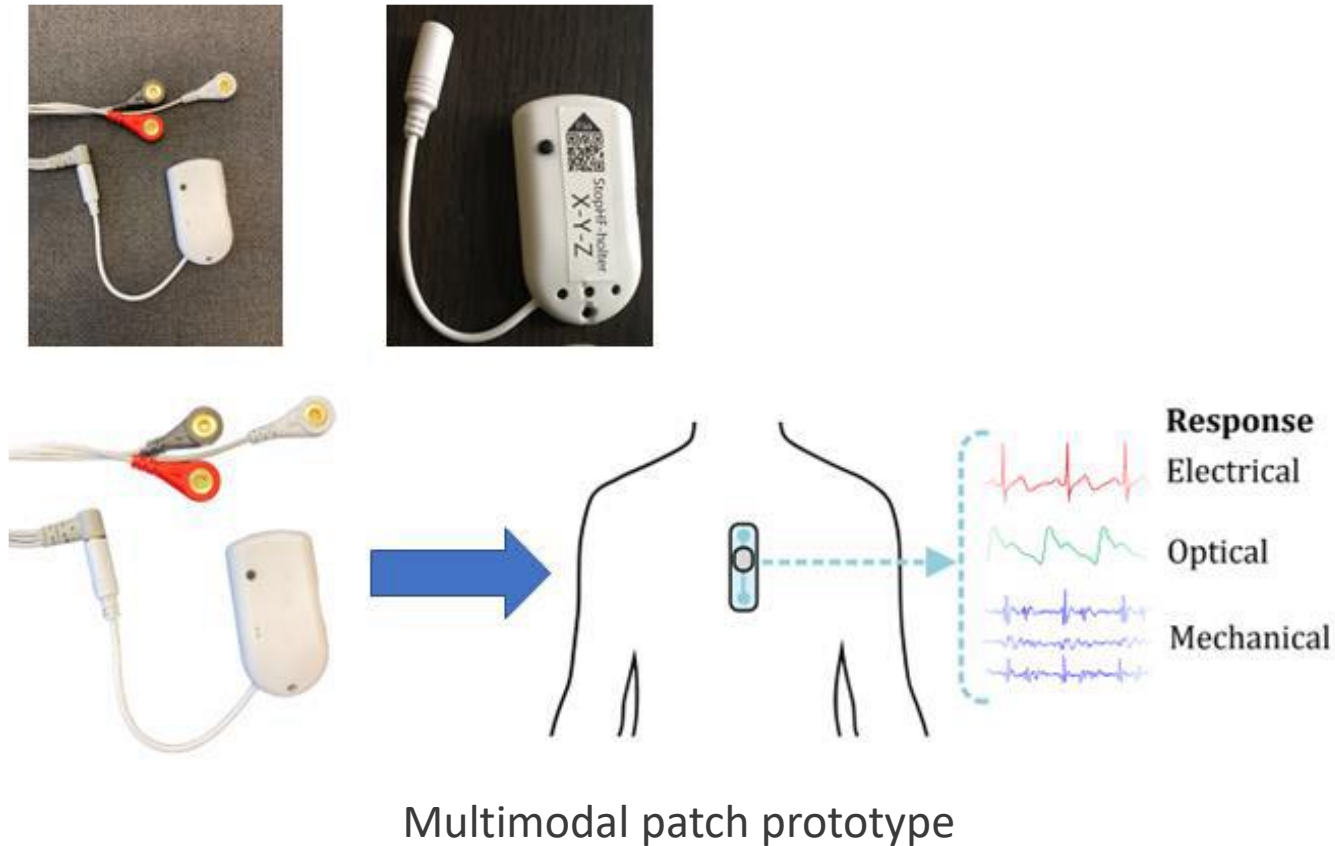
Our approach

- POC4Triage performs clinical studies that acquire real-world measurements in ambulances, creating an important dataset foundation
- Incorporate unsupervised learning on extensive non-stroke EEG datasets to improve generalizability
- Automate data quality assessment and artifact mitigation using advanced signal processing and deep learning techniques

The four point-of-care devices

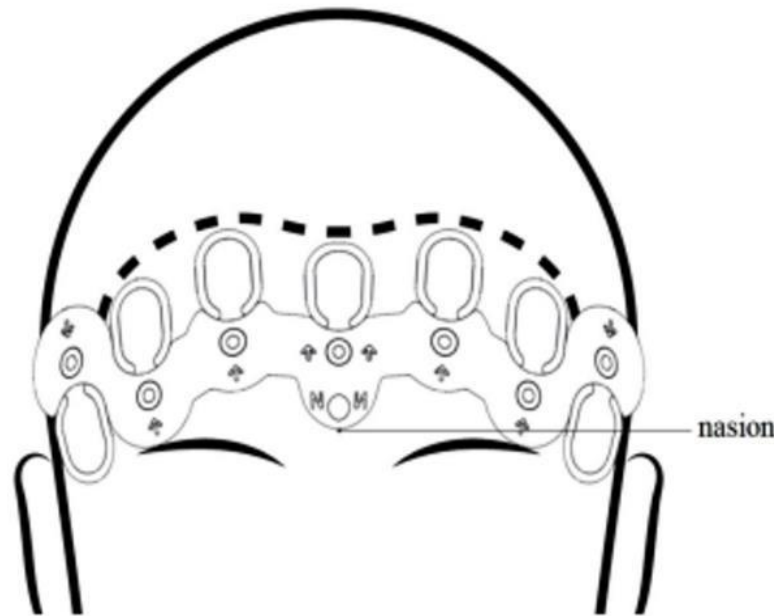
1. Multimodal patch device to sense cardiorespiratory events

- Measures electrical and mechanical activity of the heart and tissue oxygenation



The four point-of-care devices

1. **Multimodal patch** device to sense cardiorespiratory events
 - Measures electrical and mechanical activity of the heart and tissue oxygenation
2. **Sub-hairline EEG-stroke** device for LVO stroke detection in urgent care
 - Fast and reliable EEG measurement to detect LVO-Stroke



Sub-hairline EEG concept prototype

The four point-of-care devices

1. **Multimodal patch** device to sense cardiorespiratory events
 - Measures electrical and mechanical activity of the heart and tissue oxygenation
2. **Sub-hairline EEG-stroke** device for LVO stroke detection in urgent care
 - Fast and reliable EEG measurement to detect LVO-Stroke
3. **functional near-infrared spectroscopy (fNIRS) patch** for detection of brain stroke in urgent care
 - Stroke detection by measuring blood oxygenation and dynamic variations of cerebrospinal fluid in the subarachnoid space

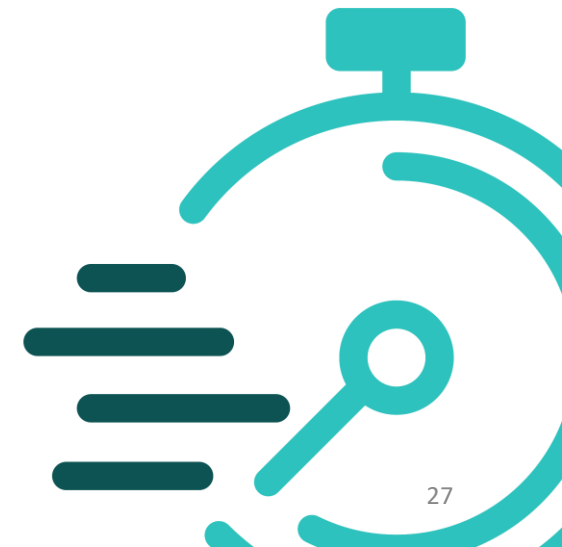


fNIRS prototype

1. **Multimodal patch** device to sense cardiorespiratory events
 - Measures electrical and mechanical activity of the heart and tissue oxygenation
2. **Sub-hairline EEG-stroke** device for LVO stroke detection in urgent care
 - Fast and reliable EEG measurement to detect LVO-Stroke
3. **functional near-infrared spectroscopy (fNIRS) patch** for detection of brain stroke in urgent care
 - Stroke detection by measuring blood oxygenation and dynamic variations of cerebrospinal fluid in the subarachnoid space
4. **Portable immunosensor** to detect blood biomarkers for stroke
 - Lateral flow electrochemical sensing method using single drop of blood

Functional near-infrared spectroscopy (fNIRS) device presentation

University of Oulu
Dr. Hany Ferdinando





D3 device – POC4TRIAGE

Functional near-infrared spectroscopy device (fNIRS)

University of Oulu

May 2025



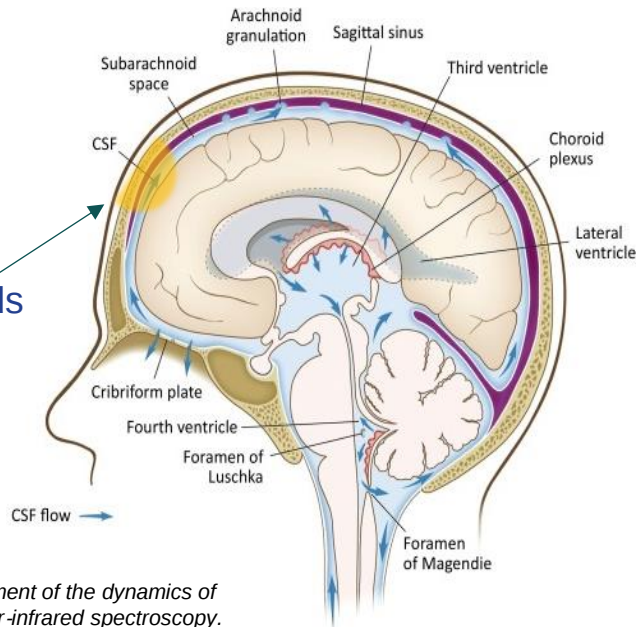
D3 - “Glymphometer”

- 3-channel multiwavelength fNIRS

Optionally also:

- 4 EEG
- 3D accelerometer
- 3D gyroscope
- 1 SCG (with external light cable to chest)
- 1 ECG (with external light cable to chest)
- 250 Hz sampling frequency

Measurement of neuro-hydrodynamics including cerebrospinal fluids (CSF)



MYLLYLÄ, Teemu, et al. Assessment of the dynamics of human glymphatic system by near-infrared spectroscopy. *Journal of biophotonics*, 2018, 11.8: e201700123.



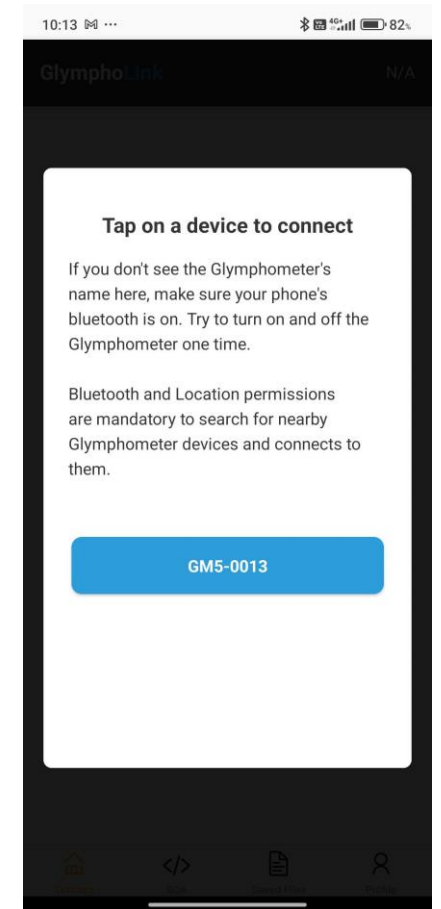
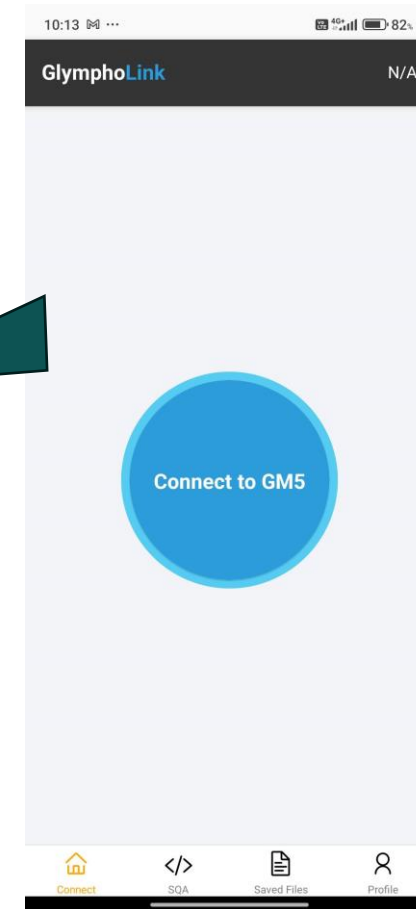
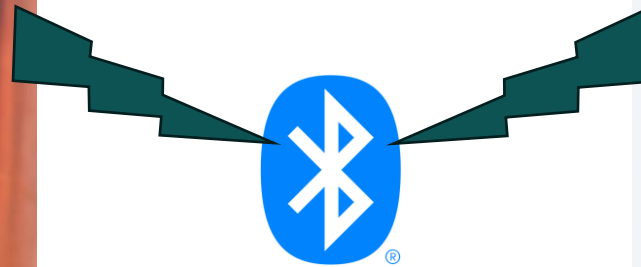
Wireless wearable device



Dimension: 9 x 4.5 x 1.5-2 cm

Weight: ~100 grams (depending on the battery size)

Connected via cable to a computer or Bluetooth to a smartphone or Tablet





Mobile app

The screenshot shows the GlymphoLink mobile app interface. The status bar at the top indicates the time is 10:14, and the battery level is 74%. The app header displays 'GlymphoLink' and the battery level. The main content area shows the following elements:

- Device ID:** A red box highlights 'GM5-0013 is Connected'.
- Bluetooth status:** A red box highlights the 'Pause Data Streaming' button and a toggle switch.
- Adjust light level:** A red box highlights the 'Light Level: 30%' slider.
- Start/stop recording:** A red box highlights the 'Start recording' button (a black circle with a white dot).
- Elapsed time:** A red box highlights the 'Recording Duration: 0s'.
- Menu:** A red box highlights the bottom navigation bar with icons for 'Connect', 'SQA', 'Saved Files', and 'Profile'.

Annotations on the right side of the screenshot include:

- Battery level
- Enable/disable data streaming
- Adjust light level, default = 30%
- Start/stop recording



Mobile app

Required data

Login to the cloud

10:18 4G+ 82%

GlymphoLink 74%

Profile

Researcher ID	Project Name
Hany	POC4TRIAGE
Country	State
FI	PP
City	
Oulu	

ⓘ These details will appear in the saved files' names.

Firestore User

No active user. Please sign in or sign up to upload files.

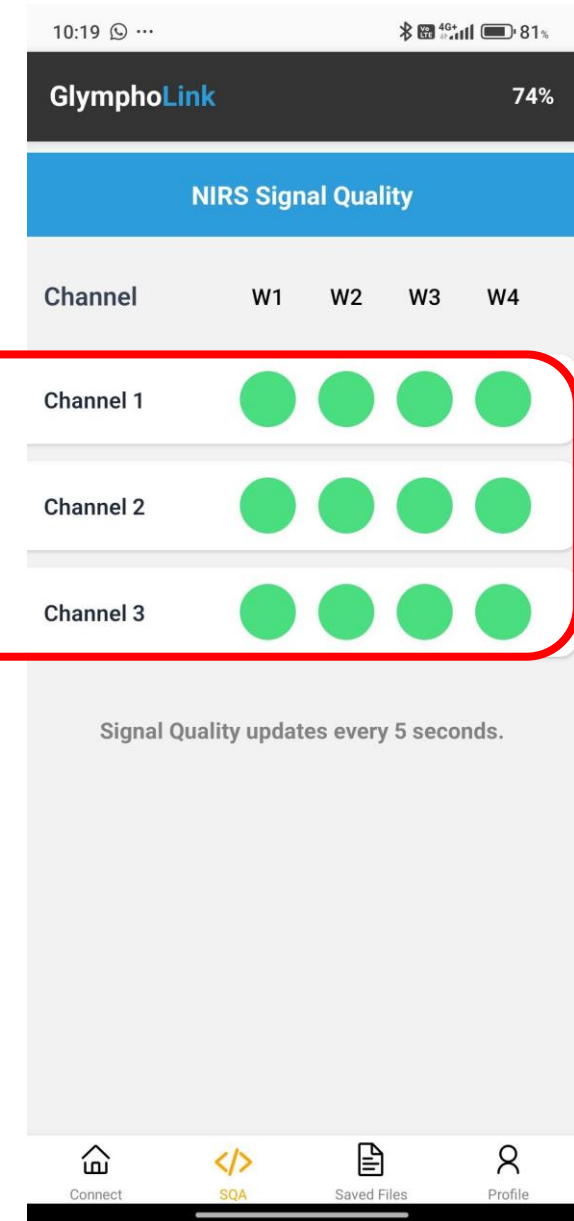
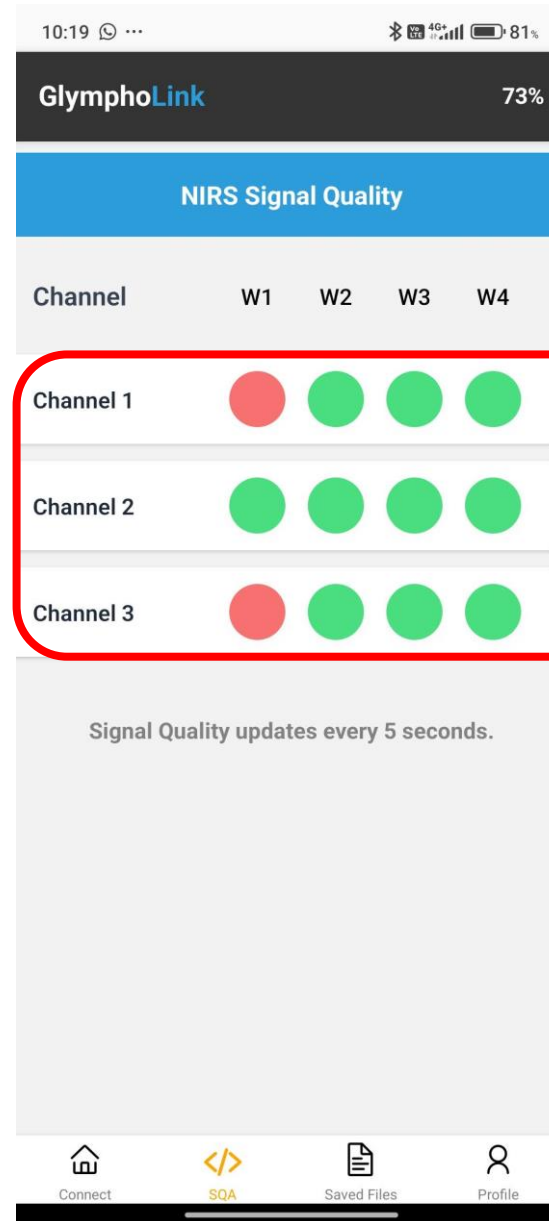
Sign In / Sign Up

Connect SQA Saved Files Profile



Mobile app

NIRS signal quality indicator:
Red = unacceptable
Green = acceptable





Mobile app

Additional info: short free text with '_'
between the words

For example: p1 (to indicate protocol #1),
5_5_5 (to show 5 mins baseline, 5 mins treatment,
5 mins after treatment), etc.

Anonymous ID, don't include
personal ID

Discard/save the data



10:35 73%

GlymphoLink

Project Name *

POC4TRIAGE

Additional Info

Any extra information

Participant Anonymous ID *

ID

Researcher ID * Country *

Hany FI

State * City *

PP Oulu

Discard Save

Most of the fields have been filled
based on the information in the
user's profile

10:18 74%

GlymphoLink

Profile

Researcher ID	Project Name
Hany	POC4TRIAGE
Country	State
FI	PP
City	
Oulu	

① These details will appear in the saved files' names.

Firebase User

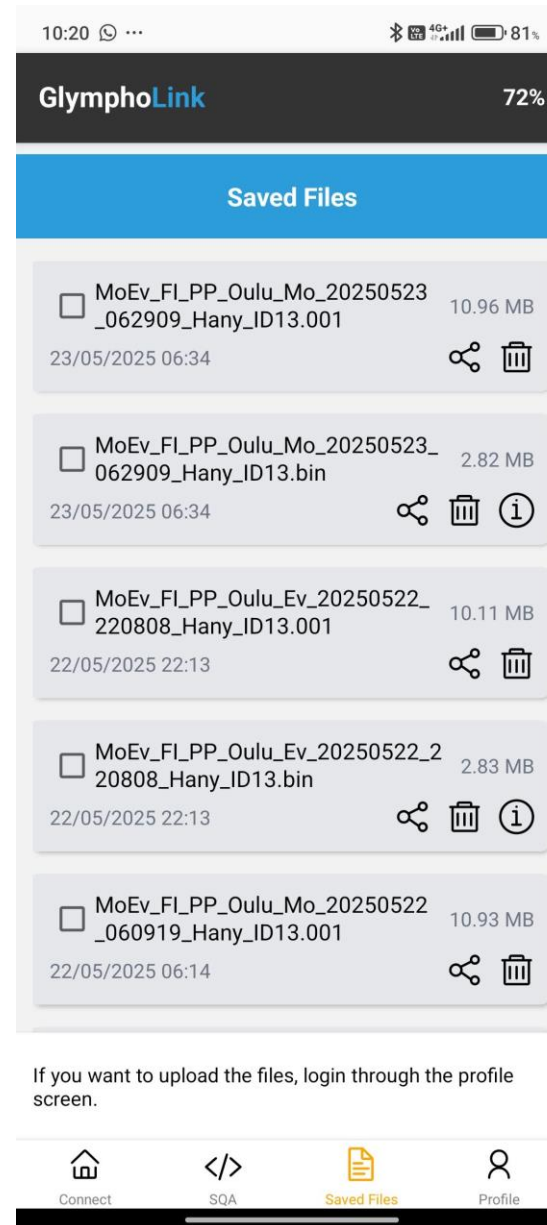
No active user. Please sign in or sign up to upload files.

Sign In / Sign Up



Mobile app

List of available files from the previous measurements



For more information visit



<https://poc4triage.eu/>



<https://www.linkedin.com/company/poc4triage>



Questions & Answers



Introduction to MDR in AIS

Minimizing Door to Reperfusion Times in Drip and Ship Model for Patients with Acute Ischemic Stroke

SYNYO GmbH

Alexander Nikolov | Research Manager & Project Coordinator



PROGRAMME

European Partnership on Transforming Health and Care Systems (THCS):
European Union under the Horizon Europe Framework Programme –
Grant Agreement No. 101095654 (FFG grant agreement No. 50773503).

PROJECT DURATION

03/2024 to 03/2027 (36 month)

IDENTIFICATION CODE

FP-1127

COORDINATOR

AZIENDA OSPEDALIERO UNIVERSITARIA SENESE (AOUS)

PARTNERS

6 from 5 countries (Austria, Switzerland, Italy, Spain & Latvia)



Co-funded by
the European Union





OBJECTIVES



IMPROVE

the in-hospital workflow for LVO AIS patients to minimize treatment delays and optimize outcome



ASSESS

the efficacy and safety of the streamlined in-hospital workflow compared to the standard pathway



IDENTIFY

challenges and issues in stroke management and implementation of telemedicine



COMPARE

the outcomes and feasibility of the optimized workflow in different clinical settings and partner countries



EXPLORE

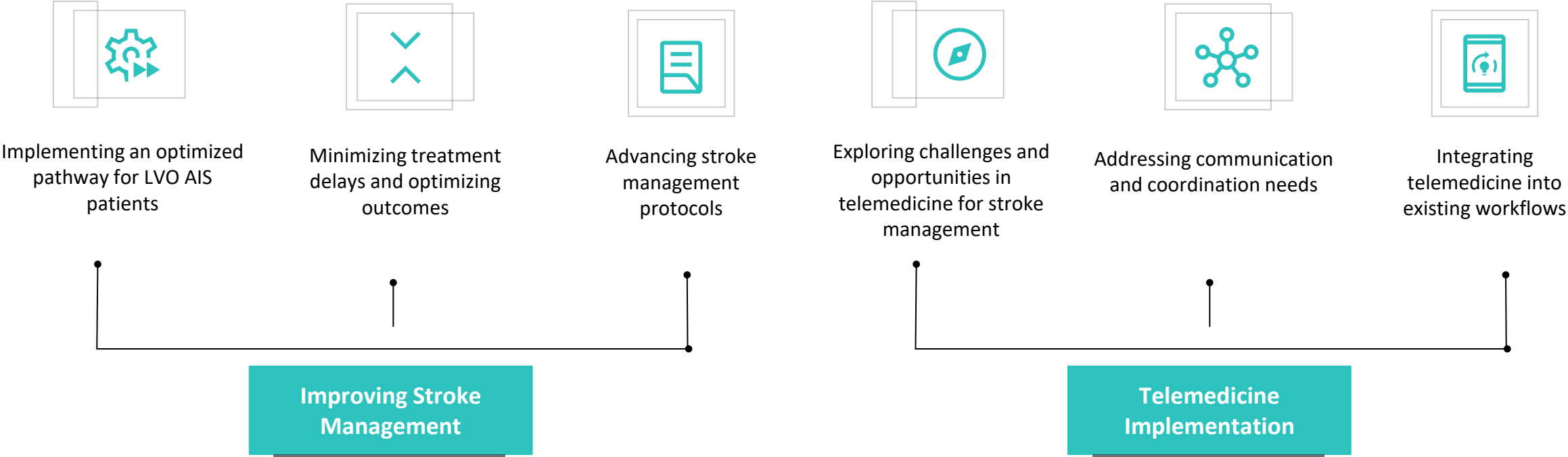
the potential application of streamlined pathways for other time-sensitive morbidities and improving services for all patients



MDR in AIS

EXPECTED PROJECT IMPACTS

Key information



BROADER IMPACTS AND BENEFITS

Key information



Multicenter Collaboration

- Evaluating the optimized pathway across different clinical settings
- Sharing knowledge and improving stroke management on a broader scale



Economic Sustainability

- Assessing efficacy, safety and economic sustainability of the optimized workflow
- Providing evidence for cost reduction and resource optimization



Policy and Societal Impact

- Informing evidence-based policies and guidelines for stroke care
- Reducing disability and morbidity associated with AIS
- Enhancing the quality of life for stroke patients

SUBSCRIBE TO OUR NEWSLETTER

And we will keep you
up-to-date with our
latest project news!

MDR in AIS 



SCAN ME



Funded by the European Union



HOME NEWS EVENTS ABOUT CONSORTIUM MEDIA CONTACT

Minimizing Door to Reperfusion Times in Drip and Ship Model for Patients with Acute Ischemic Stroke





SCAN ME







Questions & Answers



Enhancing Quality of Life for persons with stroke – EQL

An international, multi-method project across three phases

EQL aims to improve the rehabilitation process, health, and well-being of older persons with stroke rehabilitated at home across three European countries:

Sweden, Latvia, and the Netherlands.

Project Coordinator

Dalarna University (Falun, Sweeden), prof. Marie Elf

Project partners

University of Groningen (Groningen, the Netherlands), prof. Louise Meijering

Riga Stradins University (Riga, Latvia), asoc.prof. Signe Tomsone

Lunds University (Lund, Sweeden), assoc. prof. Maya Kylén

Maastricht University (Maastricht, the Netherlands), Prof. Hilde Verbeek



Enhancing Quality of Life for persons with stroke – EQL

Overview of study design



Phase 1

Knowledge generation

- Review of policy documents in three countries.
- Interviews and place-mapping with stakeholders.
- Translation and validation of Collective efficacy scale.



Phase 2

Developing the intervention in a co-design process

- Workshops with stakeholders, guided by the double diamond design process.
- Production of prototypes.



Phase 3

Prototype testing and implementation strategies

- Translating the intervention into practice.
- Case study and mixed methods design.
- Three-phase pilot study with a pre-test/post-test design.



Questions & Answers





RĪGA STRADIŅŠ
UNIVERSITY



TRANSFORMING HEALTH
AND CARE SYSTEMS

PEER-HOME Care

Pedagogy and Enriched Environment for Rehabilitation – Holistic,
Optimised, Methodical and Emphathetic Care

Guna Berzina
Department of Rehabilitation
Riga Stradiņš University

PEER-HOME Care

Duration: 36 months (01/05/2024-30/04/2027)



UNIVERSITY OF GOTHENBURG



RĪGAS STRADIŅŠ
UNIVERSITĀTE



NORWEGIAN SCHOOL
OF SPORT SCIENCES

Rīga Stradiņš University
(RSU) - CLTC Higher
Education



U.PORTO

UNIVERSIDADE
DO PORTO



RĪGA STRADIŅŠ
UNIVERSITY

Team



TRANSFORMING HEALTH
AND CARE SYSTEMS



James Rudd
(Norges Idrettshøgskole)



Arve Opheim
(Sunnaas Hospital HF)



Katharina Sunnerhagen
(University of Gothenburg)



Guna Bērziņa
(Riga Stradiņš University)



Matheus Pacheco
(University of Porto)



Luca Oppici
(Norwegians College of Sports)



Ann Marie Hestetun-Mandrup
(Sunnaas Sykehus HF)



Lena Rafsten
(University of Gothenburg)



Assistant Agnese Kārklīņa
PhD student
(Riga Stradiņš University)



Marita Bjerke
(LHL Stroke)

The Objective



To develop and test the feasibility of a novel, home-based intervention that utilises Enriched Environment (EE) paradigm to enhance stroke patients' engagement in exploratory motor activities within their home environments to enhance rehabilitation.

WP1: conceptual groundwork

Review of EE protocols in animals

Review of pedagogical approaches at home

Review of home modifications

Data synthesis and conceptualization of EE pedagogical principles

EE definition and pedagogical principles

EE concrete strategies and examples

NIH NORWEGIAN SCHOOL OF SPORT SCIENCES

Interview to stakeholders (patient org, therapists...)

Policy review

National rehabilitation contexts: opportunities and challenges

WP3: REEP HOMEcare resources

Reviews

Test in the lab

Validation

Exploration Measures and Tools

RĪGAS STRADIŅA UNIVERSITĀTE

UNIVERSITY OF GOTHENBURG

Workshops with stakeholders

ToC and Intervention details

Educational Resources and Tools

Feasibility Trial

WP2: acceptability and feasibility

NIH Institutt for lærerutdanning og friluftslivsstudier
NORGES IDRETTSHØGSKOLE

Thank you!

DRS
R





Questions & Answers



Discussion

SUBSCRIBE TO OUR NEWSLETTER

And we will keep you
up-to-date with our
latest project news!

MDR in AIS 



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Funded by
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Minimizing Door to
Reperfusion Times in Drip
and Ship Model for Patients
with Acute Ischemic Stroke





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