

Expression of Interest HealthChain Leading SME Primorsko-Goranska (Croatia)

Titular Assist.Prof. Teodora Zaninović Jurjević, PhD, MD
Clinical Hospital Center Rijeka (KBCRI)

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KBCRI

01



About us



One of five
clinical centers
in Croatia

3456
employees

1,069
hospital
beds

Regional hospital
center covering three
counties

Providing medical care
for approximately
600,000 inhabitants

more than 45,000
patients are hospitalized
per year reaching some
300,000 hospital days.
Around three million
outpatient services are
provided and some
600,000 outpatient visits,
while in the day hospital
around 190,000 hospital
services are rendered.

THE CHALLENGES

02



Challenges at a glance

MediLink

Facilitating communication between specialists and general practitioners in remote areas.

- Remote telemedicine technology that would facilitate communication between specialists (cardiologists in KBCRI) and general practitioners who are treating patients in remote areas to reduce delays in treatment and contribute to better health outcomes for residents in remote areas of the region.

FallPredict

Real-time patient monitoring during independent movements in the Hospital.

- Wearable sensor to track changes in posture and movement, specifically focusing on detecting loss of balance and falls during the hospital stay.
- Nurses/caregivers receive real-time alerts and notifications from the fall detection system so they can quickly react.

MediLink

Facilitating communication between specialists and general practitioners in remote areas.

Challenge description & main objectives

- cardiovascular diseases are the leading cause of morbidity and mortality in Croatia
 - heart failure prevalence worldwide is around 1-2% in adult population (31 000 - 62000 people in Croatia)
 - importance of early diagnosis
- problem of remote areas in the region of Primorsko-goranska
 - so far specialists from KBCRI provide services in “dislocated infirmaries” two times a month

Main objectives:

- development of a remote telemedicine platform which would facilitate communication between KBCRI specialists and general practitioners in remote areas
- enhanced access to specialized cardiac care in remote locations

Solution functional requirements

- the solution shall be a platform, portal, or application
- secure communication for real-time video conferencing, secure messaging and collaborative discussions
- intuitive and user-friendly interface to ensure ease of use for both specialists and general practitioners
- the software should have a possibility to choose the croatian language
- option to send/receive sound data
 - integration of third party medical devices (stethoscope, thermometer) allowing for a digital physical examination

Pilot scope & set-up conditions

- the pilot will be conducted in croatian language
- KBCRI Ethics Committee validation
- usage of teleconferencing systems available for communication between the nodes (remote locations)
- the system needs to be scalable (peer to peer communication, data sharing)

End-user type	Role	Number
Cardiologists from the KBCRI	They have to provide requirements, recruit family doctors, use and validate the solution.	5
Primary care doctors (family doctors) in the branches of the Primorsko-Goranska Healthcare Center	They have to provide requirements, recruit patients, use and validate the solution.	5
Patients	Participate in the pilot and validate the solution.	25

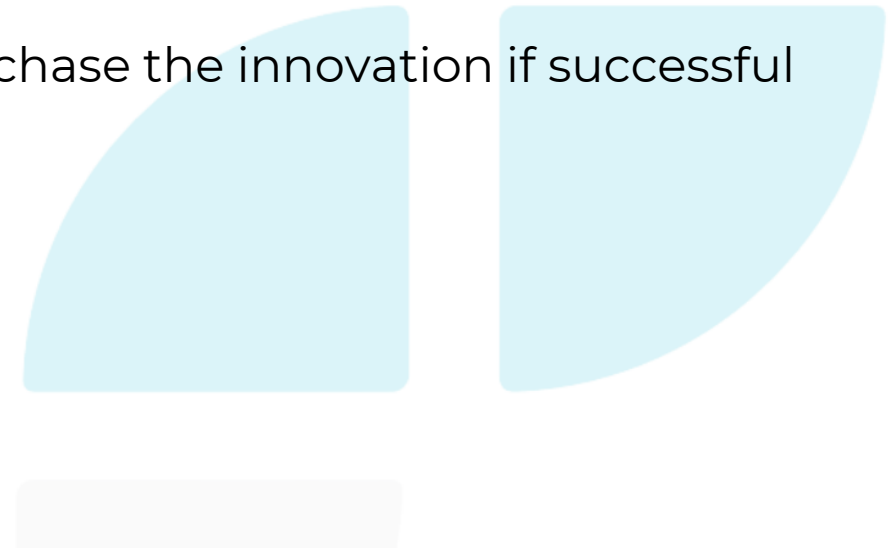
Targeted users

Expected impact & KPIs

- improved access to specialized care, enhanced efficiency of patient referrals, reduced delays in treatment → better health outcomes for residents in remote areas of the region of Primorsko-goranska
- the goal → more than twenty-five (25) successful specialist-general practitioner communications facilitated through MediLink
- reduction of unnecessary expenses for the patients and hospital
 - reduction of hospital visits by at least 7%
- patient and doctors' satisfaction surveys (Likert scale)
 - at least 60% positive answers on both ends

Adoption plan

- if the pilot project is successful, KBCRI internal decision-making body will decide about the acquisition of the innovative solutions
- there is no commitment for KBCRI to adopt or purchase the innovation if successful



FallPredict

Real-time patient monitoring during independent movements in the Hospital.

Challenge description & main objectives 1

- prevention efforts rely heavily on manual supervision by healthcare staff
- Clinic for cardiovascular diseases - 53 beds and 8 special chairs for one day hospital stay (therapy and diagnostic procedures),
- the number of medical staff - 74 nurses working in shifts and 8 caregivers
- it's not feasible that each patient is monitored all the time
- tenders are announced and scholarships are approved
- the number of nurses is still insufficient

Challenge description & main objectives 2

- providing continuous and better supervision or assistance for patients who need to go for a walk, use the restroom, etc.
- enhancement of patient safety, falls and injuries risk reduction, optimization of staff resources
- increasing patient satisfaction, reducing adverse events
- around 20 patient falls yearly, about 15% are serious one with severe injuries like bone fractures.
- nurses will be immediately alerted
- patients mobility and independence within the hospital environment wouldn't be limited only to their room and bed.
- only patients who will give approval will wear wearable sensors for fall detection
- fall risk assessment gains significant medical attention and financial burdens

Challenge description & main objectives (conclusion)

- to enhance patient safety by providing a solution that can detect potential falls in real-time
- the solution aims to minimize the risk of injuries resulting from falls and improve the response time of healthcare providers
- patients can preserve their mobility and independence within the hospital environment

Solution functional requirements

- wearable sensors on the patient or their clothing (e.g. wrist, leg, slippers) to accurately detect changes in posture and movement
 - compact design and lightweight
 - comfort and Skin-Friendly Materials:
 - water Resistance:
 - battery Life: Sensor should be able to work normally without re-charging or changing batteries for 30 days.
 - wireless connectivity (e.g., Bluetooth) with monitoring system that will be placed in the room for nurses or smartphones of nurses.
 - croatian language
- immediate alerting mechanism that notifies healthcare providers when a potential fall is detected in real-time.
- the exact location of the patient at the time of alert
- a user-friendly interface for healthcare providers to view real-time data, alerts, and patient information related to fall detection.
- the system should be able to monitor several patients at the same time.

Pilot scope & set-up conditions

- **30 patients** will participate in the pilot and validate the solution
- **10 Medical staff members** (Cardiologists and nurses):
 - to provide requirements
 - recruit patients
 - use and validate the solution
- **An Ethics Committee of the KBCRI** must previously validate the approach of the pilot
- The solution shall be fully **GDPR** compliant

Expected impact & KPIs 1

- **Reduce number of fall incidence rate by 10%.**
 - comparing patients who will have wearable sensor with group of patients who won't (both groups will be of similar age/health condition) in certain period of time
- **Reduction in Fall-Related Injuries:**
 - comparing the severity and types of injuries in falls of the patients who have wearable sensor and patients who don't.
 - comparing if the quick reaction of the medical staff (they receive alert by the solution) can reduce severity of injuries.

Expected impact & KPIs 2

- **Patient Satisfaction:**
 - administer patient satisfaction surveys on the patients who participated in testing:
 - do they feel better and safer wearing it?
 - does it impact their comfort during the stay?
 - did they feel that the system respected their privacy?
 - did the fall monitoring system impact their ability to engage in daily activities?
- **The aim:** at least 20 patient surveys received
 - 60% of positive answers.
- **Likert scale** will be used for rating.
 - the satisfaction of the medical staff who will participate in the pilot will be also measured by the survey. The aim is to have 60% of positive answers

Adoption plan

- If the pilot project will be successful, our internal decision-making body will decide about the acquisition of the innovative solutions.
- there is no commitment for KBCRI to adopt or purchase the innovation if successful

NEXT STEPS

03





READ

The expression of interest documents:
<https://healthchain-i3.eu/leading-sme/>



ASK

In case of questions regarding EoI please contact the project coordinator:
elena.lopez@ticbiomed.net
myriam.martin@ticbiomed.net
maria.bernabe@ticbiomed.net
In case of questions regarding challenges please contact the Klinički Bolnički Centar Rijeka Team
teodorazj@gmail.com
sandro.krizman@kbc-rijeka.hr
ana.pecotic.simuncic@kbc-rijeka.hr



FILL IN

Your proposal following the template provided.



SUBMIT

Before
16th February 2024

Q&A

04

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Thank you!

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