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Call for SMEs
HealthChain Follower SMEs

Western Slovenia (Slovenia)

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Arton Lipaj - DITA

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Content

01 Surgical hospital Rožna dolina
02 Challenges, solutions & follower SMEs work
03 Next steps
04 Q&A

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KIRURŠKI SANATORIJ *Rožna dolina*

Surgical hospital Rožna dolina, Ljubljana

01

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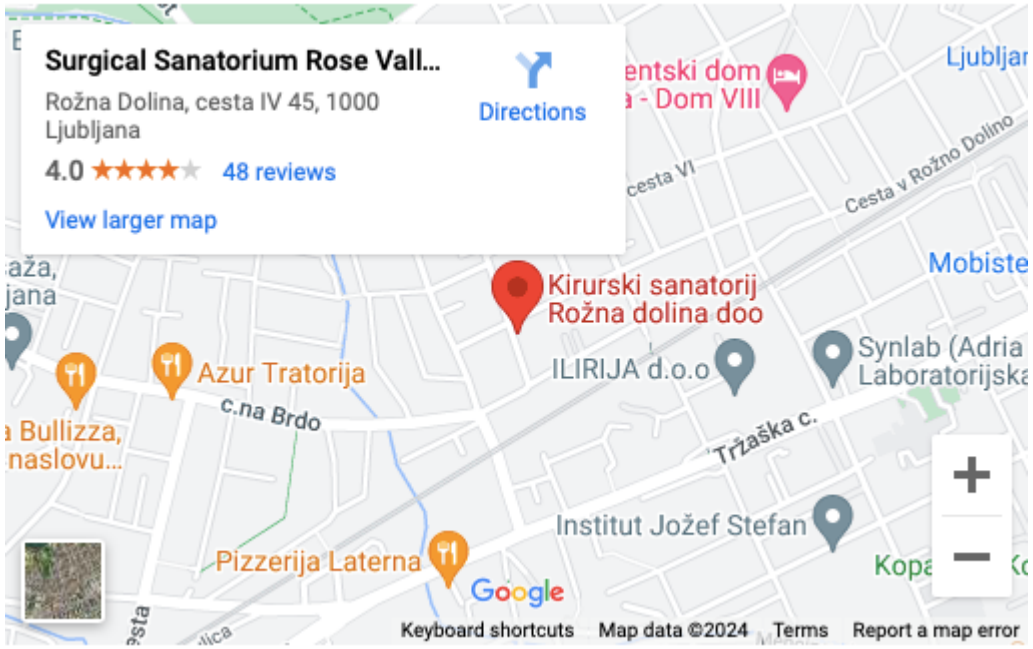
About us

- We are small surgical hospital in Ljubljana, Slovenia, with 77 employes
- Majority of our work is in the field of orthopaedic and abdominal surgery
- About 7000 surgical procedures is performed per year…



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02

CHALLENGES, SOLUTIONS & FOLLOWER SMES WORK

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KIRURŠKI SANATORIJ Rožna dolina

Challenge 1

HIPRO

Improving patients' safety and empowerment after fast-tracking hip surgery.

- User-friendly application based on pictograms which improves safety of patients after fast-track hip surgery and facilitates empowerment of patients and their communication with surgeon.
- creation of a personal medicine card before and after surgery
- 14 days daily reporting of pain level and body temperature after surgery
- a collection of all medical documentation relevant to the operation
- remote consultation with medical personnel enabled
- reporting quality of life with the EQ 5D 5L questionnaire, before surgery, after 14 days and 3 months

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ZENLAB

MobileCare+

Enhancing Post-Op Resilience in Fast-Track Hip Surgery.

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MobileCare+ description: User-friendly application based on pictograms which improves safety of patients after fast-track hip surgery and facilitates empowerment of patients and their communication with surgeon.

The main components of MobileCare+ include:

- **Mobile App for Patients (Android, IOS):**The mobile app serves as a patient-centred platform, featuring a chatbot companion that guides users through their post-operative journey. It facilitates automated follow-ups and collects valuable patient-reported data through conversational surveys. The app prioritizes user-friendliness, with pictograms for simplified information, multi-device access, and customizable communication templates.
- **HL7 FHIR Big Data Infrastructure**: infrastructure ensures seamless data flow between the mobile app and hospital systems, enabling a real-time interoperability with Electronic Health Records (EHR) and facilitates the aggregation of patient data for insightful analytics.
- **User Interface for Clinicians**: A dedicated interface for clinicians providing real-time access to patient data and analytics.
- **Privacy and Security Pillar**: Ensuring the confidentiality and integrity of patient health data with technologies for authentication and authorization (KeyClocak, Solver, SAPL...).
- **LLM Pipeline for PRO Collection**: The Language Model (LLM) pipeline supports the collection of PROs using standardized surveys and natural language processing.

Languages supported: English and Slovenian

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Requirements covered by ZenLab (Leading SME)

- Requirements and design: studies, healthcare routines, digital interventions, platform's requirements & conceptual architecture.
- Back-end functionalities for seamless integration into clinical routines
- Co-creation and real-world evaluation of MobileCare+.
- Technical and administrative coordination, monitoring of the KPIs

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Work to be done by the Follower SME

- Jointly setting up a co-creation methodology, technical and functional requirements and conceptual architecture.
- Focus in development of the app for patients in corelation with the functionalities supported by the system developed by ZenLab, Developing the modules for presenting medical information, enhancing patient, caregiver, and professional empowerment.
- Mobile Health Application for patients (iOS & Android), integrating smart-band functionalities.
- Focus on developing a backend for physicians' data access, personalization and automation (using CDS hooks) of care workflow (messages, alerts, activities. medication), and communication., advanced security and privacy mechanisms, including cryptographic tools and access controls, on top of the ZenLab architecture.
- Focus on co-creation and real-world evaluation of MobileCare+
- Implementation of the dissemination and communication strategy aligned with the HealthChain Consortium.

Challenge 2

MEPRO

Improving patients' safety by assessing mental distress after surgery.

- Mobile phone application for self-assessment of mental distress to alert family, relatives or physicians that patient may have a medical condition and needs to start conversation or seek medical help. Many patients are not willing to discuss their well-being with relatives.

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DITA
INNOVATIVE TECHNOLOGY

COMPASS

Comprehensive Monitoring and Post-surgical Support System for Physical and Mental Wellbeing.

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Compas description: Mobile phone application for self-assessment of mental distress to alert family, relatives or physicians that patient may have a medical condition and needs to start conversation or seek medical help.

- **mPatient App**: User-friendly mobile interface presenting data in easily digestible visualizations. It tracks mood swings, well-being, rehabilitation progress, upcoming appointments, and aids in managing physical and mental states. The app includes features such as eConsent, Diary & Care Plan, Message for patient-doctor communication, Knowledge Bank for mental health information, and a Virtual Assistant providing personalized support.
- **mClinician App**, a web-based solution, aids clinicians in decision-making and optimizing physical visits by providing a back-end interface as a decision support tool. It integrates real-world data collected by the mPatient App, enhancing overall patient care and communication.
- **Micro-service-based infrastructure** supporting these components consists of Apache Camel and Apache ActiveMQ Artemis. Apache Camel facilitates external Access to AI and data services, serving as a connection between components, while Apache ActiveMQ Artemis, an MQTT broker, handles internal and external communication. The architecture, verified at TRL7, incorporates REST API implemented with Java and Swagger UI for documentation and testing.

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Requirements covered by DITA (Leading SME)

- **Project management and Awareness and Impact building**: effective monitoring, adherence to plans, ensuring quality and risk management.
- **Requirements elicitation and design of the study protocols:** initial understanding on mental health monitoring, post-surgery well-being, and digital intervention practices. Identify technical requirements and ensures compliance with privacy and security regulations.
- **Platform Development:** establishing an advanced multimodal sensor network and data model for capturing features essential for monitoring mental health parameters, empowering patients through educational materials and direct patient-doctor communication.
- **Reference Platform Architecture and Open APIs Specifications:** aligning with relevant models (Rest, ReEIF & FIWARE).
- **Risk Assessment Model supporting:** feature extraction using graph similarity techniques, feature enrichment and linking mental health risk prediction and proposing interventions, by employing diverse ML.
- **Co-creation, Evaluation and Demonstration in Real-World Conditions:** organizing, deploying and operating the living labs

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Work to be done by the Follower SME

- Development of the Application for physicians; backend portal, personalization and automation of care workflow: messages, alerts, activities, privacy control.
- Patient application development, based on the multimodal sensor network and data model system developed by the leading SME.
- Integration with third-party devices.
- Ios and Android application store distribution.
- Joint integration, Data & Security assurance.
- Setting up a co-creation methodology.
- Support the organisation, deployment and operation of living labs.
- Community Engagement.
- Support the pilot Roll-out.
- Co-evaluate Pilot Outcomes, monitoring technical suitability, GDPR compliance, and KPI results.

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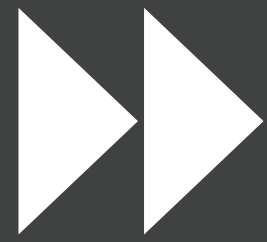
03

NEXT STEPS



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READ

The Call for SMEs **documents**: https://healthchain-i3.eu/call-smes/

ASK

In case of **questions**, please contact us through the following channels:

F6S blog (Online Q&A)
F6S support team: support@f6s.com
HealthChain Help Desk: hello@healthchain-i3.eu

FILL IN

Your proposal following the **template** provided.

SUBMIT

Via the F6S platform before **5th August 2024**

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Q&A

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Thank you!

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