

UCY- eHealth Lab Annual Review of Projects & Research Achievements

MESSAGE FROM THE eHealth LAB DIRECTOR

Over the last 20 years, the eHealth Lab of the University of Cyprus has established itself as a major contributor to the digital evolution of healthcare. It has actively participated in a wide range of European and internationally supported projects, securing and managing more than 12 million Euros in funding from RIF, the European Commission, and various international organizations.

The eHealth Lab's multidisciplinary team of scientists and engineers brings strong expertise in eHealth and mHealth, medical imaging, computational intelligence for data analytics, and life sciences informatics.

Over the years, we have sustained robust partnerships with actors of the quadruple helix—such as the Cyprus Ministry of Health, national e-Health bodies, public and private healthcare institutions, patient organizations, and industry partners, including leading international medical centers.

We are pleased to present the inaugural edition of the “eHealth Lab” Annual Newsletter. This publication aims to provide a comprehensive overview of the Lab's current and planned research and project activities, while disseminating relevant information to scholars, practitioners, and stakeholders engaged in or interested in the eHealth domain.

Prof. Constantinos S. Pattichis
Director of eHealth Lab UCY

eHealth Lab Resourcing

The eHealth Lab team comprises 17 highly qualified and dedicated professionals from the University community, along with external collaborators, who work collectively to address the complex challenges of the health sector. The Lab adheres to international standards and best practices, ensuring the development of robust, high-quality software that is certified by international authorities for deployment both within Cyprus and across European Union health networks.



The **eHealth Lab** has been certified and being operating under the framework and principles of ISO9001. This international standard which defines the rules for a Quality Management System (QMS) is fully aligned with the vision of the **eHealth Lab** team for deliver High Quality services and products with minimum defects and optimal cost.

The Lab's developers have also strong knowledge of eHealth standards like HL7 and FHIR, which are widely used to help healthcare systems share and exchange patient information.

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Technical Standards & practices - eHealth Lab

The primary deliverable of the eHealth Lab team is the development, deployment, and ongoing support of software applications that align with product specifications issued periodically through EU directives focused on the digital health era. To meet these demanding requirements, the eHealth Lab team leverages state-of-the-art tools and best practices, as outlined below:

Aiming to adopt the PM² project management framework

The eHealth Lab plans to adopt the EU project management methodology PM² to enhance the structure, transparency, and efficiency of its development and implementation activities.

PM² provides a standardised framework that aligns closely with EU expectations, supporting better compliance with emerging digital-health directives and product specifications.

By introducing PM², the team aims to strengthen planning, clarify responsibilities, streamline documentation, and improve communication across stakeholders.

The methodology's risk-management and monitoring practices will also increase project predictability and resource optimisation.

● Use of DevOps –Code Development, Deployment and Support

A key cultural aspect of DevOps within an organization is the enhanced communication and collaboration among involved teams. By leveraging DevOps tools and automating the software delivery process, collaboration is fostered through the integration of development and operations workflows and shared



responsibilities. The eHealth Lab team has adopted the SCRUM Agile methodology, an ideal framework for completing work collaboratively in small, manageable increments. Continuous practice and feedback loops enable the team to deliver value incrementally while fostering teamwork and ongoing improvement.

International - European and Inland Collaborations

Software developed for the public health sector must adhere to established universal standards for the exchange and management of health data. The following are the primary organizations with which the eHealth Lab team maintains direct collaboration and partnerships

Health Level Seven International (HL7-FHIR Rel5)

Healthcare records are increasingly digitized, and as patients navigate the healthcare ecosystem, their electronic health records must remain accessible, discoverable, and interpretable. To enable automated clinical decision support and other machine-driven processes, the data must be structured and standardized. FHIR (Fast Healthcare Interoperability Resources) is designed to simplify implementation while preserving data integrity. It builds on existing logical and theoretical models to offer a consistent, robust, and easy-to-implement framework for exchanging information between healthcare applications.

- **eHealth Lab Long-Standing Presence in the EU Technical fora and ehealth Connectathons**

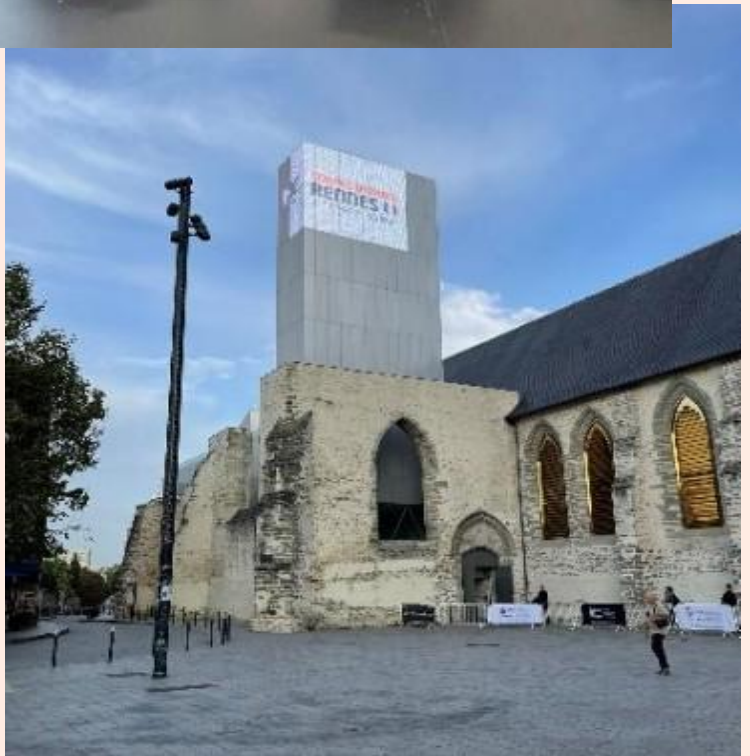
Participation in EU **connectathons** is critical for advancing eHealth innovation and interoperability. These events provide a unique environment for testing, validating, and integrating digital health solutions in real-world scenarios across multiple vendors. For the **eHealth Lab**, attending connectathons offers hands-on experience with emerging standards such as **FHIR** and the **International Patient Summary (IPS)**, allowing the team to refine software, ensure compliance, and optimize workflows. Beyond technical expertise, these events foster collaboration and build strategic alliances within the European digital health community. The knowledge and connections gained directly enhance Cyprus's capacity to deliver interoperable, high-quality healthcare solutions on a global scale.

INTEGRATING THE HEALTH CARE ENTERPRISE (IHE)

The **IHE-Europe Connectathon** provides a unique opportunity for vendors to test the interoperability of their products in a structured environment with peer vendors. Participants test against multiple vendors using real world clinical scenarios following IHE Integration Profiles specifications.

The annual **IHE Connectathon** affords all companies, large and small, the opportunity to test their own products, across a variety of domains including **Radiology, Cardiology, Pathology, Patient Care Devices, Patient Care Coordination, Pharmacy, Laboratory, and IT Infrastructure**, along with those of their peer vendors.

Our Team at a Connectathon in action..



INLAND COLLABORATIONS

The area of Health services is by nature very sensitive and it requires adherence to specialized standards and close cooperation with the National and EU health authorities. To facilitate this we have established a two way communication with the National eHealth Authority of Cyprus, The Deputy Ministry of Research, Innovation and Digital Policy, as well as a number of other professional organizations specialized in the Software Development and management of eHealth projects. The Lab is always open to extend its cooperation with other companies and local organizations who are also working in the eHealth Sector.

WHO (GDHCN) membership

WHO's Global Digital Health Certification Network is an open-source platform, built on robust & transparent standards that establishes the first building block of digital public health infrastructure for developing a wide range of digital products for strengthening pandemic preparedness and to deliver better health for all.

- ***Individuals obtain agency over their own health information***
- ***Health providers can more easily verify health records to support continuity of care***
- ***Governments can provide standards and mechanisms to issue and verify that records are linked to authorized institutions, within and between countries.***

As the EU Gateway for the issuance of the EUDCC Certificates was decommissioned on 30th December, 2023 the eHealth Lab has been assigned with the task to undertake the onboarding process and the switchover from the EU gateway to the WHO (GDHCN) gateway. This exercise was completed successfully and within the specified deadlines.



eHealth Lab List of Active Projects

Potential for European Digital Identity

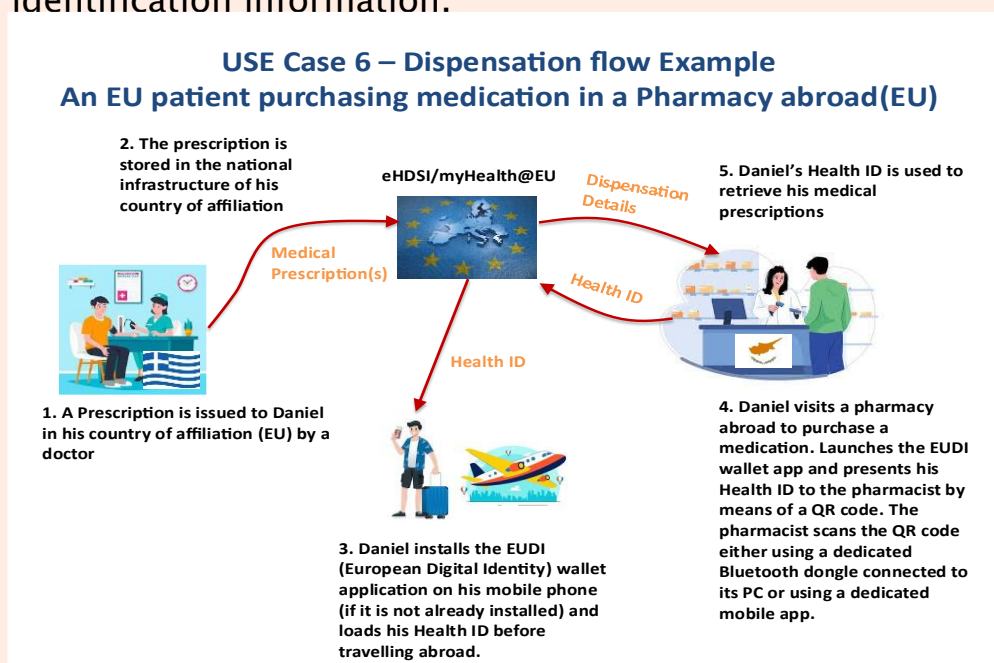
Potential–EU is among the four large–scale pilot projects focused on developing prototypes and testing practical use cases of EU Digital Identity Wallets. The Potential consortium, which aims to complete its work within the next two years, will focus its attention on six use cases aligned with the priority needs expressed by citizens in Europe:

■ **Project Vision:** To offer a seamless solution that simplifies online processes—such as opening a bank account, renting a car, signing documents remotely, or redeeming ePrescriptions—while users are abroad.

■ eHealth Lab in alliance with the Cyprus National Electronic Health Authority (NeHA) are actively participating in **Used Case 6** of the Project.

This use case aims to replace traditional forms of identification with verifiable digital credentials. By equipping a citizen's digital wallet with two core attestations—one for Personal Identity (PID) and one for Health Identification (Health ID)—it demonstrates that individuals can present their health entitlements in a trustworthy, interoperable, and privacy-preserving manner across borders.

It enables citizens to grant pharmacists in a foreign Member State access to their relevant health data. Health professionals can then verify the individual's identity, confirm their entitlements, retrieve the pertinent prescription data from the MyHealth@EU infrastructure, and dispense medications—all without manually transcribing identification information.



PATHeD



The PATHeD initiative is a European project co-funded by the European Union, involving 19 partners from 11 EU Member States. Six of these countries will deploy and use the mobile app toolkit for patient access to health data in production. Cyprus is among the piloting countries, represented by three entities: the National eHealth Authority, the University of Cyprus, and the Cyprus University of Technology. At the University of Cyprus, our role is to design, develop, and test the application.

PATHeD aims to develop and test a preliminary version of a mobile app toolkit for patient access, complementing the enhanced data-sharing capabilities of the European Union and participating Member States. The initiative will pilot a mobile app prototype that enables patients to access translated summaries of their medical histories while abroad in another Member State and seeking medical treatment.

The app is designed to enhance data-sharing capabilities across the EU by providing easy access through a user-friendly interface. Building on this foundational tool, the PATHeD project will evaluate the infrastructure and provide insights to the European Commission. The ultimate goal is to guide future developments for patient access via mobile apps and to foster a patient-centered ecosystem, giving individuals broad, seamless access to their personal health data.

eHealth Lab participation in the Pathed Forum



Deployment of Generic Cross Border eHealth Services in Cyprus

The main objective of this project is to support Cyprus in joining a secure peer-to-peer network for exchanging Patient Summaries and ePrescriptions via the National Contact Point eHealth. This initiative aims to achieve the following general objectives:

1. **Enable seamless cross-border care** by ensuring secure access to patient health information across European healthcare systems.
2. **Enhance patient safety** by reducing medical errors, providing rapid access to health information, and improving the accessibility of patients' prescriptions, including when abroad.
3. **Support medical personnel in emergencies** by supplying life-saving information and reducing the need to repeat diagnostic procedures.



Cyprus's overarching goal is to deliver high-quality cross-border healthcare to its citizens living abroad and to visiting citizens from other EU Member States.

The system was successfully developed and deployed in fall 2025 and is currently operational across multiple European states.



"Photo from the "European Health Union and the eHealth Roadmap for Cyprus" organized by NeHA on 28 June 2024

EESSI

EESSI is an ICT system designed to connect the social security administrations of EU Member States for the purpose of electronic data exchange. It is being developed by the European Commission pursuant to Regulation (EC) No 883/2004 and its Implementing Regulation (EC) No 987/2009, as last amended by Commission Regulation (EU) No 1372/2013.

Scope of EESSI: From a geographical perspective, the EU rules on social security coordination apply not only within EU territory but also in several additional participating countries: Iceland, Liechtenstein, Norway, and Switzerland. These rules cover nationals of EU Member States, EEA countries, and Switzerland, as well as third-country nationals who are legally resident in the EU and involved in cross-border situations.

Data exchanges will occur between the competent administrations of all participating countries in the areas governed by the Regulations on social security coordination. EESSI's purpose is to strengthen the protection of citizens' rights by enabling the electronic exchange of personal social security information concerning migrant workers within the EU among the competent national administrations. The goal is for EESSI to replace the approximately 200 paper forms currently used for communication between administrations.



Meet our eHealth Lab Team

Knowing each other better is what makes our team more collaborative and effective working in a trust and sociable environment.

In the next publication of our bulletin we will meet and interview members of the eHealth Lab. It will be valuable for prospective collaborators to hear directly from colleagues involved in the Lab about how they experience their participation and how they perceive their contribution. Their firsthand perspectives can offer meaningful insight into the Lab's working environment, collaborative culture, and the impact of their work.

Get ready—many more project activities are on the way...!