Call for Startups & SMEs

Hospital Innovation Challenge: *Bridging Clinical Needs with Startup Innovation*

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1. Overview

The **Hospital Innovation Challenge (HIC)** is an initiative organised by Health Cluster Portugal (HCP), Instituto Pedro Nunes (IPN) and EIT Health Innostars, within the scope of the TEF-Health and DigiHealthPT projects. This session brings together real-world challenges identified by TEF-Health hospitals partners, offering startups and Small and Medium Enterprises (SMEs) the opportunity to provide innovative solutions. The 6 most promising solutions will be selected for presentation at the Innovating Health Together (IHT) Conference, hosted by HCP, which will take place on **28 October 2025** at the Super Bock Arena, in Porto, Portugal.

2. How does it works?

This Call for Solutions represents the second phase of the initiative. In the first phase, leading European hospitals were invited to submit clinical or administrative challenges. In this second phase, startups and SMEs are invited to select **one** challenge to answer, and submit a technology-driven solution.

A jury will evaluate all proposals and select the **six** most innovative solutions. On 28 October 2025, the selected startups/SMEs will be invited to present their solutions during the IHT Conference. For this purpose, HCP will provide up to **3 free conference tickets** to each selected company for both days of the event.

Each selected startup/SME will deliver a 6-minute presentation, and the three most promising solutions will be awarded specialised innovation services provided by DigiHealthPT.

3. Why should I attend?

All submitted proposals will be evaluated by a jury composed of hospital representatives. During the HIC session, you will have the opportunity to engage directly with representatives from relevant hospitals in the TEF-Health Consortium. In addition to showcasing your solution, you will be able to expand your network within the European health innovation ecosystem and become eligible to receive innovation vouchers* for support services provided by DigiHealthPT.

* Vouchers - 2000, 1000 and 500€ for the first, second and third places, respectively.

4. Which SMEs and Startups are eligible?

Startups and SMEs are eligible to participate if they meet **all** the following criteria:

- Startups and SMEs legally incorporated and established in a European member state;
- Be an SME according to the EU definition (Commission Recommendation 2003/361/EC);
- Have not received over 220,000.00€ in state aid support under Article 28º of GBER Regulations, during the previous 3 fiscal years *(This is only applicable to Portuguese SMEs; non-Portuguese SMEs are not required to provide proof for this criterion)*;
- Present a solution with a Technology Readiness Level (TRL) of 4 or higher until 8*** (not mandatory)*;
- Submit a proposal addressing only one of the published hospital challenges.

Innovating Health Together Conference
28 - 29th october 2025
Porto
Super Bock Arena
Congress Center

Note: The six selected companies will be invited to complete a digital maturity assessment. Following the provision of services by DigiHealthPT, all companies will be requested to complete the assessment once again, in order to evaluate progress and impact.

*Preference for solutions with TRL between 4 and 8. However, solutions with sufficient maturity that could be adapted to meet the specific needs of the challenge we also welcome.

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5. What are the challenges?

The challenges identified by TEF-Health partner hospitals are listed in **Table 1**.

Table 1. Challenges submitted by TEF-Health partner hospitals.

ID	Hospital	Clinical area	Challenge
HIC01	Unidade Local de Saúde de São João (Porto, Portugal)	Intensive care Organ donors	Development of an AI tool that, by analysing the variables listed below, generates an alert so that each clinical situation can be assessed and properly monitored, in order to minimise the loss of possible/potential donors and prevent their deterioration. The alert would be triggered by any of the following variables: **Clinical (medical records):** Glasgow Coma Scale / Glasgow / GCS ≤ 6 NIHSS ≥ 27 H&H / Hunt-Hess ≥ 4 **Imaging (extraction from brain CT report):** Hemorrhage in the temporal region Midline shift ≥ 5 mm Transtentorial herniation OR Cerebellar herniation OR Cerebellar tonsillar herniation OR Subfalcine herniation

HIC02	Grenoble University Hospital (Grenoble, France)	Cardiology	Coronary microcirculatory dysfunction is frequent and has important diagnostic and prognostic value, but remains difficult to assess. While coronary flow reserve (CFR) can be measured non-invasively, only invasive methods currently provide specific microcirculatory indexes. As such, guidelines recommend invasive testing when dysfunction is suspected. Developing non-invasive indexes remains a technical challenge due to the complexity of the microcirculation. The hospital has a patient database with both non-invasive and invasive coronary assessments, and a European registry is underway via the European Association of Cardiovascular Imaging. The hospital believes an AI solution can enable the development of a reliable non-invasive index for coronary microvascular dysfunction. Therefore, it would be interesting for a Company to develop a non-invasive index of coronary microcirculatory dysfunction. This would enable non-invasive patient screening, better cardiovascular risk assessment, and improved evaluation of treatment efficacy.
HIC03	Grenoble University Hospital (Grenoble, France)	Nutrition; Intensive care	Malnutrition is prevalent among patients in intensive care units (ICU), and is associated with adverse outcomes; however, it often remains underdiagnosed. The challenge is to automatically screen for malnutrition risk throughout the ICU stay, utilizing routinely collected data: CT scans, laboratory tests, weight history, monitored physiological variables, and nutrition prescriptions. Notably, skeletal muscle mass index

			(SMI) is already computed by our in-house AI algorithm, ODIASP, which is currently undergoing CE marking. The goal is to develop an AI-based alert system that predicts a decrease in SMI or the need for prolonged artificial nutrition, using retrospective data from a clinical data warehouse. This alert would help identify patients who may benefit from early referral to a clinical nutrition specialist, enabling timely and personalized nutritional interventions. The core difficulty lies in integrating heterogeneous data sources and ensuring high-quality, explainable predictions for clinicians.
HIC04	CHU Rennes (Rennes, France)	Other	The hospital is building a native FHIR layer inside its information system to enable open, standardised data exchange. Yet there is still no generic path to integrate the machine-learning models already validated with our eHOP data warehouse (heparin dosing, neonatal sepsis alerts, ICU dashboards) into day-to-day clinical workflows. CHU Rennes therefore seek a reusable technical framework that is able to expose the relevant real-time ICU data through FHIR R4 resources; to host any predictive or analytic service as CDS Hooks or SMART-on-FHIR micro-services, with sub-100 ms response time; to embed full MLOps capabilities for versioning, drift detection and GDPR audit; to display interpretable risk cards or dashboards directly inside the electronic health record without vendor-specific code. The solution must run on-prem or in a sovereign cloud and

			demonstrate, within six months, the bedside deployment of at least two existing models while leaving the door open for future algorithms.
HIC05	Unidade Local de Saúde de Coimbra (Coimbra, Portugal)	Cancer; Dermatology	Skin cancer is one of the most widespread types of cancer worldwide, yet early detection can significantly improve treatment outcomes and survival rates. Despite advances in dermatology, a substantial gap in access to timely and accurate early-detection remains, particularly in underserved or remote areas. Many individuals fail to seek medical evaluation for suspicious skin lesions due to lack of awareness, long wait times for dermatology appointments, or geographic and socioeconomic barriers. This challenge seeks innovative, scalable, and ethically sound AI-powered tools that can assist in the early-detection of skin cancer. The goal is to empower patients and primary care providers with decision-support systems that can analyze skin images or symptoms and suggest the likelihood of malignancy, prompting timely clinical follow-up.
HIC06	Martin University Hospital (Martin, Slovakia)	Administrative	Inefficient and fragmented scheduling of medical staff and operating rooms - Many departments still rely on manual tools (e.g., Excel sheets, paper schedules), lacking a centralized software solution to coordinate shifts across clinics. Staff shortages, especially on weekends and holidays, lead to overworked doctors and nurses, and last-minute absences are managed ad hoc. Additionally, limited operating room capacity and lack of

			automated scheduling for surgeries (e.g., room assignments, surgical teams, equipment) contribute to long waiting lists and frequent postponements due to emergencies, staffing gaps, or lack of post-op beds.
HIC07	Martin University Hospital (Martin, Slovakia)	Pharmacy & Medication Management	Managing the Supply or Consumption of Medications: ● Medication use is often recorded manually or inconsistently ● There is no real-time integration between the central pharmacy, inventory, and departments ● Risk of overdosing or duplicate administration, especially when patients are transferred between departments ● Inventory levels at departments and the pharmacy are not synchronized in real time ● Inefficient stock management – shortages of some drugs vs. expiration of others. ● Communication between the central pharmacy and clinical units is not always digital or streamlined.

6. How can I submit a proposal?

To participate, applicants must complete the **online submission form [here]**, which includes:

- SME/startup contact details;
- A brief description about the solution;
- A **2-minute video pitch** showcasing the proposed solution (Optional).

Each SME or startup may submit **only one proposal**, addressing one specific hospital challenge.

7. What are the key dates?

- Deadline for submission: **July 31 , 2025**.
- Announcement of selected solutions: September, 2025.
- Presentations at IHT Conference: October 28, 2025.
- Final Result: October, 29, 2025

8. Which criteria will be used for evaluation?

All proposals will be evaluated by a jury composed of representatives from HCP, IPN, EIT Health Innostars, and the hospital that submitted the selected challenge.

The evaluation will be based on the following criteria:

- Alignment with the specific hospital challenge (40%);
- Relevance and level of innovation of the proposed solution (30%);
- Clarity and feasibility of implementation (20%);
- Technology Readiness Level (TRL) (10%).

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9. Do you need more information?

If you need more information about Innovating Health Together Conference, please access our website: https://www.ihtconference.com/

If you have any questions or need further clarification about Hospital Innovation Challenge, please contact us:

- **Priscila Maranhão** – pmaranhao@healthportugal.com

- **Tiago Carvalho** – tcarvalho@ipn.pt

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