

# Enhancing clinical AI-workflows

**Challenge Owner:** [Centre Hospitalier Universitaire de Liège \(CHUL\)](#)

The “CHU de Liège” is a public and pluralist university hospital. It is one of the seven Belgian academic hospitals. With nearly 6,000 employees, it cumulates about 42 000 patient admissions per year.

## Context

Clinical activities are receiving growing help and offers from AI-based solutions providers. It contributes to the continuous improvement of the quality of clinical practice and creates a wide scope of solutions facilitating patient’s journey. However, the tools are restricted and usable only inside these departments according to their activities.

This silo organisation limits the exchanges between the hospital’s departments. The challenge we are facing lies in the general and transversal data management.

Beyond the internal operations, the data interoperability between healthcare institutions’ departments is a key in the large-scaled development of AI tools for the health sector.

## Challenge

The aim is the development of a Clinical Support Decision System (CDSS) using artificial intelligence processes based on real time informations available in the various departmental silots.

We identify the need to develop and implement an operational workflow that will draw a strong process of data harmonization and interoperability between the various departments. This workflow should include the data integration process to the institutional data warehouse and generate an intelligent process to support and optimize diagnostic and therapeutic outcomes.

To address this challenge, potential solution providers should identify the practical needs of the practitioners to respond to patient oriented solutions, integrate the data warehouse processes and the constraints of technical data production.

**Expected demonstration:**

The vision is to perform the optimisation of care using more and more precise data, enabling a transition towards personalised medicine.

The ultimate objective is to demonstrate how artificial intelligence, using structured and non-structured data from different sources, can help the clinician in his/her diagnostic and therapeutic clinical decision making.

To that extent, solutions should assimilate the reality on the ground from the different departments producing, collecting and/or managing data. The solution should also address the long-term aim of the hospital to facilitate interconnection between the departments.

**Available datasets:**

- Personal patient data:
  - Administrative data
  - Clinical data
  - Imaging
  - (Cyto)pathology data
  - Laboratory data
- Guidelines: recommendations based on cohort studies and randomised controlled trials