Health organizations require integrated, reliable, creative information systems, capable of generating value in an opportune time.

The Patient Costing System fits into this strategic thinking.

Introduction
The Patient Costing System (PCS) aims to address the need to quantify the resources involved in direct provision of care to patients at Centro Hospitalar Universitário de Lisboa Central (CHULC).

It focuses on monitoring patient’s pathway in the hospital, considering the multiple episodes of inpatient and outpatient care from admission to discharge.

This project designs a cost monitoring model supported by a data exploration tool developed in partnership between CHULC and Glintt.

This methodology establishes an interconnection between different tools and data sources in use at our hospital center, being able to provide reliable and real-time information that supports decision making, from the top management to operational management, through standardized reports with selected indicators.

Methods
This solution was based on: (1) the definition of a technical and functional architecture that allows the analysis of costs per patient, episode, pathology, outpatient circuit, medical and surgical hospitalizations, at different levels of the organic structure: hospital departments, clinical units and specialties; 2) in the audit and review of internal process and patient health records; 3) in the review of recording patient consumption of medical devices, reusable and single use, and the supply channels by optical reading system. To determine costs, it was define a set of rules and develop a series of algorithms and calculation formulas, capable of converting the original records/data into costs.

Cost per patient
- Average cost per patient
- Total cost per patient
- Cost of the patient’s journey

Cost per Organic Unit
- Cost per discharge service, admission service
- Cost by department or specialty
- Cost per reference center

Cost for care processes
- Surgical hospitalization
- Medical hospitalization
- Conventional and outpatient surgery

Cost activity
- Cost of complementary exams
- Cost of transport
- Cost of food and cleaning

Cost of patient characterization
- Age and sex
- Geographical origin (municipality; district)
- Nationality

Cost of episode characterization
- Cost per main diagnosis
- Complexity cost (Case mix)

Example of costs per DRG and severity

Conclusions
To collect, process, analyse and distribute data from any location or operating system, identifying cost patterns, behaviours, deviations and inefficiencies, generating in-depth knowledge of the cost structure in real time and converting them into powerful output that will generate actionable actions mitigating risks and maximizing the value generated in the organization. To know and manage production costs, in an individualized way focused on the patient, their illness and their hospital journey, increasing the value that is extracted from available resources at the most appropriate cost possible in the operational and strategic process.