

TECIPOT: Study for the Evaluation of New Technologies and Process Engineering Applied to the Optimization of Hospital Transfers

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Abstract

There is a need for coordinating and manage the information flow between clinical, nursing, ancillary, cleaning and administrative staff to optimize patient transfers during admission and discharge. TECIPOT project proposes the incorporation of new technologies associated with the optimization of emergency circuits to improve the efficiency in the management of patients in the center, as well as improve the perception of patients and professionals about the processes of transfers of emergency patients, observation and discharge from the Hospital. The project proposes a 24 month study to evaluate the impact on healthcare processes.

Keywords:

Healthcare processes, LEAN, patient transfers

Introduction

This project is based on the analysis of the circuits for transfers from the emergency room, observation and discharge from the hospital. To carry out this analysis, a methodology has been established to identify needs and problems not covered within the process. To do this, using the LEAN methodology, joint sessions have been held with the professionals involved in the emergency processes, observation, transfer to the clinical unit and discharge for patients in the Hospital. After this analysis, a set of improvements and areas of work have been identified that can significantly impact the optimization of healthcare resources associated with this type of process.

Objectives

TECIPOT project proposes the incorporation of new technologies associated with the optimization of emergency circuits in order to improve the efficiency in the management of patients in the center, as well as improve the perception of patients and professionals about the processes of transfers of emergency patients, observation and discharge from the Hospital.

Methods

TECIPOT proposes the incorporation of measures associated with three fundamental groups:

- Organizational improvements that optimize the coordination of professionals involved in the process of transferring patients from the emergency room, observation and hospital discharge.
- Incorporation of equipment that reduces the delays associated with the patient transfer process.

- Development of IT solutions: as part of the project, it is intended to implement a computing platform capable of covering the following needs:

- Support to the room pass: system that facilitates the daily planning and monitoring of patients associated with the room pass.
- Notification for professionals and family members involved in the emergency process.
- Coordination with ambulance service.
- Monitoring of time indicators on the impact of the project measures on the emergency process
- Prediction of discharges: develop predictive models on the expected length of stay and hospital discharge.

This project aims to coordinate and manage the information flow between clinical, nursing, ancillary, cleaning and administrative staff through the incorporation of new technological solutions based on touch screens, mobile and computers technologies. As a result, during 2 years study it is expected reduce the time associated with patient transference during admission and discharge.

Results

Using the Lean Healthcare methodology, an analysis of the emergency, observation and hospital discharge processes has been carried out, identifying needs and problems not covered within the process, and prioritizing the lines of action in terms of importance and ease of implementation. A system has been developed which, in the form of a dashboard, allows the most representative times associated with the process to be analyzed in order to directly evaluate the impact of the measures to be implemented. Figure 1 shows how patient discharge and patient

admission evolves during the daily time schedule in multiple healthcare departments.

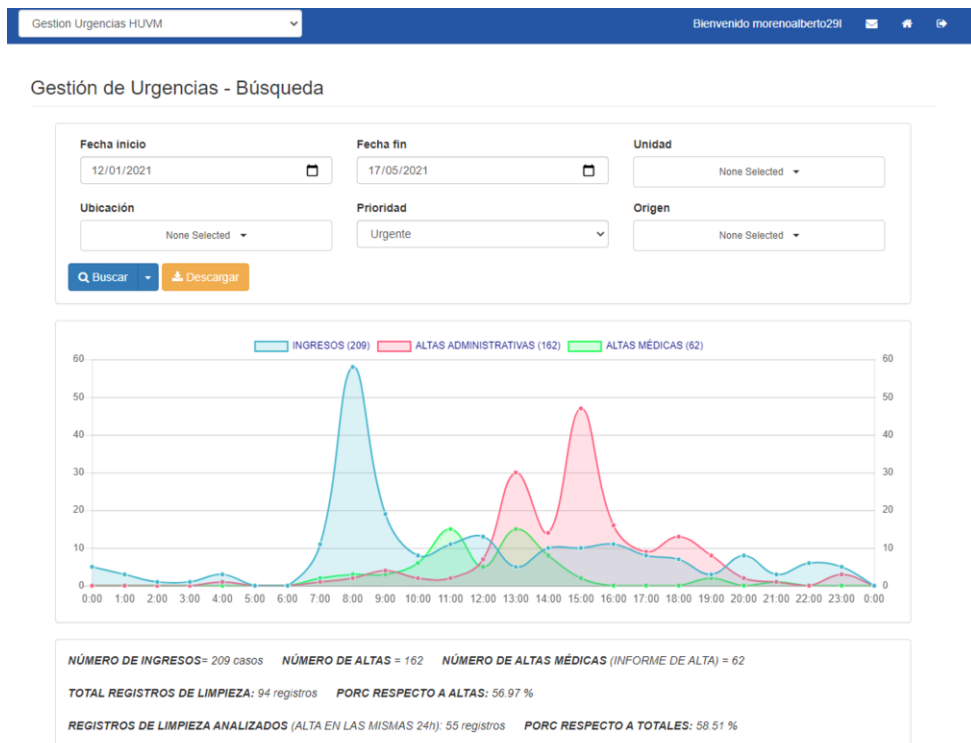


Figure 1. Overview of the patient transference monitoring dashboard

This system allowed to define new mechanisms to optimize coordination between the professionals involved, thus reducing some of the main waiting times associated with these processes. It includes a new system for coordinated ordering of emergency ambulances within the Electronic Health Record system of the hospital.

Discussion

The incorporation of new technologies associated with the optimization of emergency circuits can improve the efficiency in the management of patients at the center while representing an improvement in the perception of patients and professionals.

Conclusions

Optimizing the processes of emergency patient transfers, observation and hospital discharge through the incorporation of new technologies can improve the efficiency of the center's patient management. For this we focus on the following key aspects: (i) Identify the factors associated with the generation of waiting times and avoidable delays in the circuits of transfers from the emergency room, observation and hospital discharge. (ii) Redefine the process by incorporating new IT tools and equipment. (iii) Evaluate the economic impact of the results in the optimization of the transfer processes. (iv) Evaluate the perception of professionals and patients.

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