A local solution for a global concern
Shortage of beds: A traffic light system

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Introduction

- Shortage of beds affects all hospital system decreasing productivity and efficiency
  - →Factors that contribute to this situation
    - inappropriate nurse-patient ratio
    - delay in rooms cleaning after discharge patients
  - →Direct consequence of patient-flow problems

- Bed shortage affects health care
  - →Endangers patient safety
  - →Increases length of stay, costs and morbimortality rates.

Introduction (cont.)

- Bed occupation information not well documented on information systems produces
  - →cancellation of the admission of patients
  - →employ human resources in nonessential functions
- Low availability of beds occurs during seasonal peaks
- Bottle necks exist on passage of patients from one ward to another

This work

- Describes a possible solution centered on nurses and clerks working on inpatients transfer.

- Approach to a plan of two parts.

  →compare how long every actor involved on Patient Flow spends on his work and how long every actor would save with changes introduced, as to show the efficacy of our implementation.

Materials and Methods: Setting

- **Hospital Italiano de Buenos Aires**
  - →Academic Medical Hospital with 650 beds
  - →3000 inpatient admissions monthly, with 9500 transfers
  - →Electronic Medical Record (EMR) that runs on web platform.
  - →The nurses work on a Nurse Control Chart (NCC)
  - →ADT system (Admission, Discharge, Transfer) made possible to make maintenance of Hospital census on line.
  - →Hospital census had a 14% error on information before implementation Census on line. Two cross-sectional studies demonstrated a 5% decrease on global error
  - →Bed occupation information was better documented on the system due to online support.

Materials and Methods: Necessity

- When the nurse needs to transfer a patient:
  - →With low beds availability
    - She **has to telephone** the Admitting Coordinator asking for a non occupied bed.
      - **Synchronic Communication between Nurse-Coordinator**

- Disadvantages:
  - →Dependency on telephone call
  - →Nurses occupy beds without the Coordinators reply.
  - →wasted time on the arrangement of this transfer.

- For **optimizing resources,** improvements were developed on ADT system, EMR and Nurse Control Chart.

Results: Modifications

- Inpatient areas reorganized in Sectors Admitting Units (SAU) on ADT
- ADT System: Inclusion of Bed Manager for the Admitting Manager
  →when his SAU has bed occupancy higher than 85% can define it as "in Red".

Color	Condition : bed occupancy
Green	lower than 85%
Red	higher than 85%

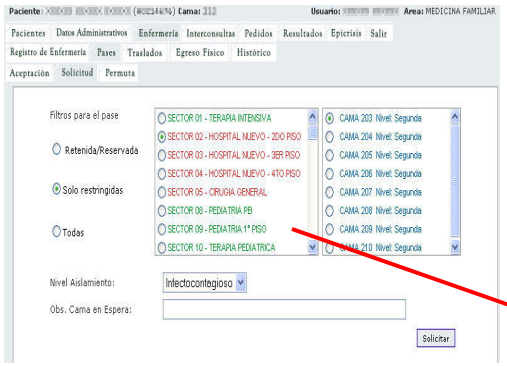
- EMR :Bed ordering System
  - bed ordering is enlisted in the Admitting Manager waiting list.
  - This solicitation is done on the EMR where nurses can visualize the SAU in Red or Green.
- Nurse Control Chart (NCC): Nurse Bed differentiated display

Results: Change on Nurse Workflow

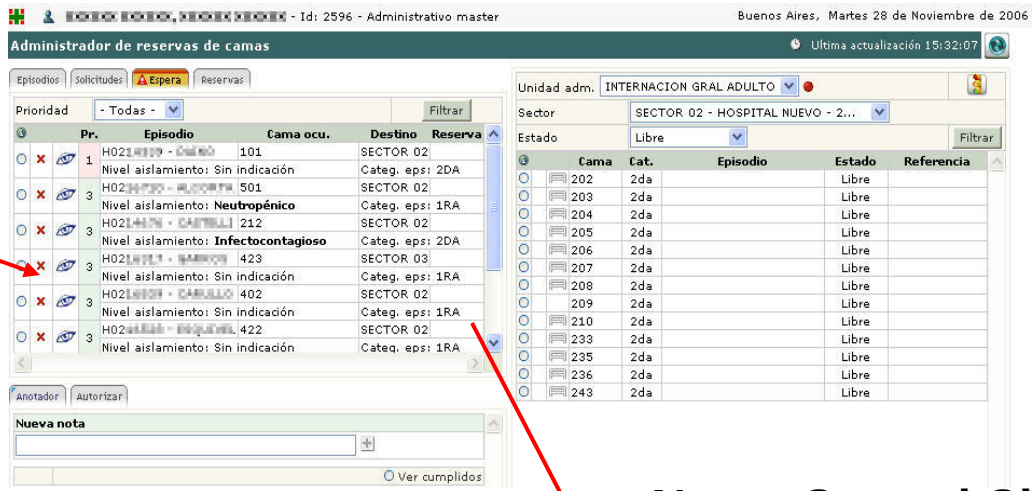
- When the nurses need to transfer a patient to a SAU "in Red" (low availability)
  - →Asks for a bed through the EMR
  - →The solicitation is automatically enlisted in the Admitting Manager waiting list (ADT) establishing an **Asynchronic communication between Nurse-Admitting Manager.**
  - →When a bed is granted by the Admitting Manager, the system indicates an active reservation on the Nurse Control Chart (color bed changes) nurse continues with the transfer, with a reserved bed which has an expiration time

Results (cont.)

EMR



ADT System: Bed Manager



Waiting List

Bed Solicitation

color bed changes

Green	Patient, who occupies this bed, is being discharged from the hospital.
Yellow	Patient, who occupies this bed, has another one already reserved for him. Transfer can be done ***without delay*** due to be a vacant reserved bed.
Red	Patient who occupies this bed has another one already reserved for him. Transfer can be done ***with delay*** because is an occupied reserved bed.

Nurse Control Chart

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References

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