**Optimisation of Bed Turnaround Process in a Hospital using Resource Visualisation**

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**Motivation**

One of the major problems many hospitals face today is the inefficient management of beds or the inefficient bed tracking systems that are available. Available of beds in a unit or department is a key measure to maximise patient care and effective cost management. Hospital beds left unoccupied as a result of waiting for the staff members to service the beds and to get it ready for the next patient is a significant cost to the Health Industry. The *Bed Turnaround Time (BTAT)* in question extended from the time discharge instructions were given to the patient to the time a new patient arrives. Many people are involved in the process of discharging a patient and preparing the bed for the next admitted patient. However, most of the process is currently manual which involves physically checking the rooms to check the availability, assigning staff for servicing them based on the status, etc.

The goal of this project is to optimise the Bed Turnaround process through visualization of resources in an efficient way, and to look out for any trends in the dataset with regards to patient discharges and admissions, with an ultimate aim of improving the Bed Turnaround Time. We aim to improve communication among departments and staff members to ensure the patient flow process is efficient and fast, and thereby reduce the Bed Turnaround Time.

**Dataset**

* Patient discharge log of a unit [Partially available]
* Patient Transfers (transfer datetime, unit) [Metrics collected/Simulate data]
* Bed status in each unit [Simulate data]
* Cleaner info, Porter info [Simulate data]
* Hospital layout [Awaiting input/Simulate]

*What are the important pieces of information you’ll be using?*

* Patient Admission details to see the pattern over a period and compare with Discharges.
* Wait-times (if available) to correlate with the Bed-turnaround time
* *(More data might be simulated if required.)*

**Patterns/Interactions**

* Availability of bed status (Clean, Occupied, Dirty)
* Availability of Cleaner/Porter info
* Potential discharges/ transfers in a day
* Total admissions statistics (to see the trend in the weekday - - any peaks during weekend? Friday?)

**Timeframe**

|  |  |  |  |
| --- | --- | --- | --- |
| **Start Date** | **End Date** | **Activity** | **Status** |
| 15-Feb | 25-Feb | Background Research/Literature Review | Completed |
| 20-Feb |  | Data Collection, Exploring D3 | In Progress |
| 01-Mar | 15-Mar | Viz Implementation - Phase 1 |  |
| 16-Mar | 31-Mar | Viz Implementation - Phase 1 |  |
| 01-Apr | 10-Apr | Fine Tuning/Project Writing |  |
|  |  |  |  |

Charts:

1.Bed status in each unit (Aggregate across the beds)  
- bar chart ,

- Bed status for each beds in the unit ( color coding , heatmaps)

2. Bed use by hour (each individual bed)

3. Admissions and discharges (Total)and in each unit by using filter