



Division of Rad Onco Dashboard for Treatment Unit Capacity Management

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Ng Chee Wen, Gan Soon Ann, Aau Wai Keong, Peter Huang Yuchi, Dr. Sharon Wong Mei Mei
National Cancer Centre Singapore (NCCS)



National Cancer Centre Singapore
SingHealth

INTRODUCTION

Given the complexity of healthcare services and delivery systems, making reliable and justified operational and strategic decisions is a challenging task in the expanding healthcare domain. The decisions have been made based on the experience of managers and staff, or they are evaluated with traditional methods, using inadequate data.

While increasing the effectiveness and efficiency of oncology care would improve both access and quality of patient care, coordinated improvement efforts have been hindered by a lack of timely access to data.

As a result of this sort of decision-making process, attempts to improve operations usually have failed or led to only local improvements.

AIM

- Develop a user-friendly DRO operation performance dashboard with resources from MOSAIQ (Oncology Information System) database to help facilitate, monitor and assess the daily performance of treatment unit workload distribution
- Provide timely update on the current room utilisation across a busy Radiation Therapy clinical floor
- Exploit the use of operational data in the most efficient way to help “managers” to better manage the performance, productivity, effectiveness and safety of the organization
- Assist the management executives in decision making

METHODOLOGY

- A team comprises of the manager, assistant manager, principal radiation therapists and cancer informaticians was formed to brainstorm an ideal dashboard attributes (Table 1) and ranked its relative importance
- Structured Query Language (SQL) and SQL Server Reporting Services (SSRS) tools are used to extract the required data from MOSAIQ (Radiation Oncology System)
- Data transformation was done and translated into meaningful information and to be delivered via dashboard

Ideal Dashboard Attributes

Attribute	Asses by	Relative Importance
Alignment with organisation goals	Whether the dashboard metrics are utilized in operational decisions	+++++
Accurate contextual data	Whether the data is relevant to the process or capacity to be improved	++++
Intuitive display with alert function	Presence of the alert function	++++
Real-time display of data	Refresh interval	++++

Table 1

Attribute	Asses by	Relative Importance
Internet- or intranet-based	Security of information and ease of accessibility	+++
Organisation culture that accepts use of objective data for decision making	Use of objective data for decision making	+++++

RESULTS

- A DRO management dashboard was produced to capture data elements which reflect the actual situation across the treatment floor (Figure 1 & 2).
- A pilot study was conducted from October 2015 to January 2016 to assess the user-friendly visualisation dashboard. Result showed 100% given it helped them in day to day treatment unit capacity management (Figure 2)

DASHBOARD



Figure 1. A dashboard that gives a real-time display of patient appointment status

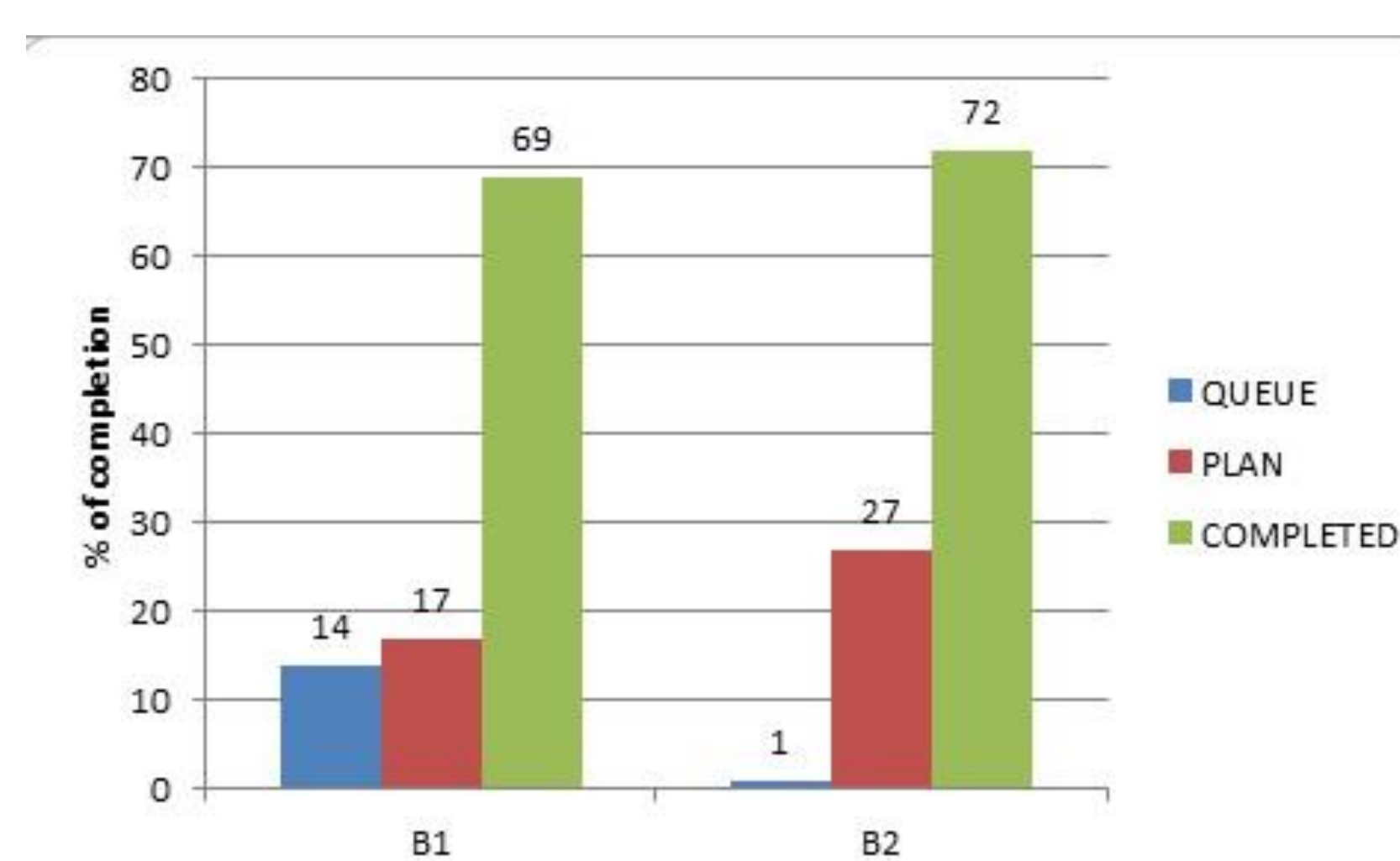


Figure 2. A quick display of data for overall performance across the department

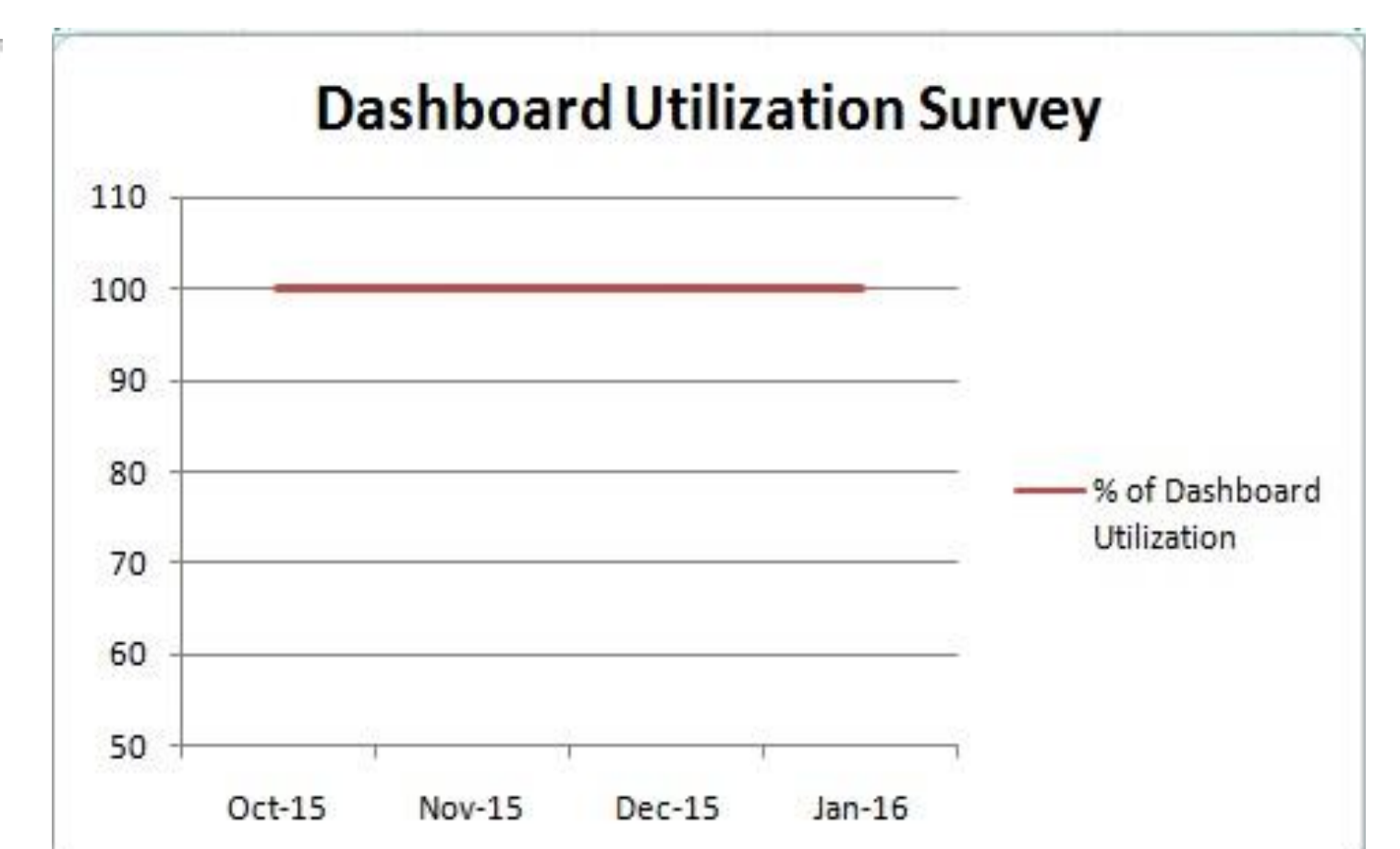


Figure 3. Survey on dashboard utilization for management decision making

CONCLUSION

The aim of operation dashboard is not just a display of information, the dashboard aims to lead a change in behaviour in such a way as to result in improvements in the metrics being monitored and displayed. For a sustained effect, the dashboard data will be used in DRO department key decisions-making process, creating a culture of transparency and objectivity.

FUTURE DEVELOPMENT

- Improvement on the current dashboard
- Looking into different stages of work processes in which the data can be captured by MOSAIQ. Eg. Patient waiting time, machine utilization rate, booking slots availability, etc