Utilizing Technology and Collaboration to Improve Patient Throughput and Manage 100+% Capacity

Gerard Colman[a], Frank Tortorella[b], Julianna Moorad[c]

[a] *Clinical Operations, The University of Texas M. D. Anderson Cancer Center, Houston, Texas*
[b] *Clinical Support Services, The University of Texas M. D. Anderson Cancer Center, Houston, Texas*
[c] *Clinical Operations, The University of Texas M. D. Anderson Cancer Center, Houston, Texas*

Abstract and Objective

As demand for services increases, health care organizations must be able to efficiently diagnose and treat more patients utilizing fewer resources. Increasing demand requires faster patient throughput, optimally allowing for more admissions with the same staff and space; this faster throughput provides the hospital with additional "effective" beds[1]. Beginning in 2004, M. D. Anderson Cancer Center faced a critical bed shortage as patients boarded for hours in the Emergency Center, Admissions, and Operating Rooms while beds became available. By focusing on the inpatient discharge process, M. D. Anderson developed short and long-term solutions:

- *formation of housekeeping room turnover teams*
- *creation of an escort-assisted discharge process*
- *assignment of discharge nurses*
- *selection of an electronic bed management system*

In combination, all solutions show promise in achieving greater efficiencies and potentially a longer-term reduction in length of stay (LOS) and a capacity gain.

Keywords:

Length of stay, Patient discharge, Discharge planning, Transportation of patients, Housekeeping, Hospital, Electronic bed management

Methods

To address improving the inpatient discharge process, M. D. Anderson initiated Project BED – Bringing Efficient Discharge. Teams in Clinical Operations made hospital beds available more quickly and gained capacity by improving patient throughput. The key to success is the collaboration between Admissions, Transportation, Housekeeping, Nursing and Information Systems. In order to achieve short term results, the patient transportation and housekeeping processes were evaluated and changes were implemented to remove obstacles and decrease the total turnaround times. The role of discharge nurse was created so that one person was tasked with collaborating with the multidisciplinary team to meet the patients' needs and ensure efficient discharge. To further increase the efficiencies gained through process improvement changes, the Eclipsys Sunrise Patient Flow system was selected. Modules for Transport, Bed Turnover and Patient Placement (Bed Status Dashboard) were implemented in phases starting in 2007.

Results

Prior to Project BED, Patient Transportation response times would exceed two hours. The national average for total transportation turnaround time is 45 minutes[2]. During Fiscal Year 2009, Transportation turnaround time decreased to well below the national average, with the median turnaround time never exceeding 33 minutes. Housekeeping's total turnaround time averaged 90 minutes prior to Project BED. In Fiscal Year 2009, the benchmark of 60 minutes was met for five months and just barely exceeded in the other months. The Bed Turnover Module includes an Interactive Voice Recognition System, used by Nursing and Transportation to send dirty bed notifications to Housekeeping. Since March 2009, over 51% of dirty bed notifications were initiated via the IVR system. In October 2008, Nursing began entering pending discharges into the Sunrise Patient Flow system alerting Admissions, Transportation, and Housekeeping of all anticipated discharges over the next 24 hours. Since March 2009, over 70% of pending discharges were entered into Sunrise. The system incorporates instant communication, automated workflow prompts, enterprise-wide transparency, and real-time process management enabling disparate departments and floors to always know what is going on and make fast, informed decisions.

Conclusion

Project BED efforts have improved the throughput process and total turnaround time for patient discharges, which, in turn, has decompressed patient boarding. While some results are preliminary, these efforts show promise in longer-term reduction in LOS, which is a goal of the institution.

Address for correspondence

jmoorad@mdanderson.org

[1] Health Care Advisory Board, 2007

[2] Advisory Board, Marketing and Leadership Council, 2008