Introduction

Worldwide many hospitals are affected by ill-timed hospital discharges, compounded by obstacles related to clinical readiness and process flow (Mustafa 2016). In pediatric hematologic oncology and transplant units, there is frequently a shortage of inpatient beds, resulting in a delay of admissions from the ED and in planned admissions from the outpatient clinic for children requiring chemotherapy or admission for acute illness. This project was implemented to improve the patient flow for our pediatric Levine Children’s-Cancer and Blood Disorders (LC-CBD) floor and thereby help relieve the burden of sick children waiting for care. On LCH 11, we currently admit oncology, transplant and medical-surgical patients. Engaging the pediatric LC-CBD provider team ensured project scope remained focused on elements over which our team had direct control to make room for another patient from the program to be admitted to the specialized unit without unnecessary wait in the clinic. A large volume of patients require acute care at our facility, making efficient flow essential to ensure high quality care across the continuum. Due to the urgent need for bed space, this Quality Improvement (QI) project aimed to improve throughput and efficiency by using a surrogate capacity indicator, i.e., increasing the percentage of appropriate discharges before noon for pediatric LC-CBD patients on the inpatient hospital unit (LCH 11), by improving the provider discharging process.

Goals

This QI project aimed to improve throughput and efficiency by increasing the percentage of discharges before noon for pediatric LC-CBD patients on the inpatient hospital unit (LCH 11) by improving the provider discharging process.

- **Outcome**
  - to increase the percentage of patients discharged by noon on LCH 11 to 45%
  - to increase the percentage of LC-CBD discharges on LCH 11 by noon without altering patient care standards to 45%
- **Process**
  - to increase the percentage of provider discharge orders initiated by 10am to 25%
  - to increase the percentage of eligible LC-CBD discharges on LCH 11 to 25%
  - to increase the number of weeks between missed opportunities (avoidable misses in provider ordering) to 3 weeks
  - to increase the percentage of time formal discharge instructions for disease specific conditions were included in first day inpatient note to 55%
  - to increase the percentage of times rounds started at 9am to 90%
- **Balancing**
  - to maintain or improve patient satisfaction related to discharge
  - to reduce or maintain our current 30-day readmissions

Improvement Process

A multidisciplinary QI team convened using the Model for Improvement as the QI framework. Many QI tools including an aim statement, key driver diagram, process flow map, and pareto charts were completed. Process flow maps assisted the team in identifying change ideas to test. Change ideas tested through multiple PDSA cycles included standardizing rounding times, modifying the rounding process, anticipating discharges with pre-discharge planning meetings, determining appropriate discharge criteria, and obtaining consensus from all providers.

Pareto charts were also used to identify reasons for avoidable missed discharge by noon and to further drill down on specific characteristics of missed opportunities. QI tools were pivotal in navigating both the logistical and psychological challenges of this project, giving us the science and structure needed to align perspectives and identify important change ideas crucial to improving our provider discharging process and throughput.

Change ideas adopted include:

- moving rounds to an earlier start time and modifying the rounds process by rounding on discharging patients first to facilitate the time required for the discharge process.
- providers agreed on discharge criteria for a set of common discharge types. These discharge criteria were added to the plan for each patient starting with the first inpatient note. After consensus, the discharge criteria in the first day inpatient note was relatively easy to implement and helped to keep the team aligned on the criteria needed for discharge.

Results/Outcomes

The goal to increase the percentage of patients discharged by noon on LCH 11 to 45% has been exceeded and has been sustained through 5/11/19.

- **LCH 11 % Discharges by Noon 2018-2019**
- **LC-CBD % Discharges by Noon**

The LC-CBD team on LCH 11 was able to increase the percentage of patients discharged by noon above goal of 45% to 56%.

Conclusion

By meeting goals, patients were less likely to have a delayed admission for essential treatments and more patients returned home earlier. Process flow mapping, pareto charts, and run charts were critical to our success, especially when it was necessary to sway opinions and have difficult conversations about our own performance. Improvement is sustained with hardened processes and continued review and presentation of data. This project illustrates that use of QI tools and methodology can foster teamwork, care and ultimately improve efficiency and care delivery to our vulnerable patients.

Resources

1. Mustafa A, Mahgoub S. Understanding and overcoming barriers to timely discharge from the pediatric units. BMJ Quality Improvement Reports. 2016;5:u209098.w3772. doi: 10.1136/bmjquality.u209098.w3772.

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