



Real-time analytics increase early discharges

Dashboard lowers cost per case, improves patient satisfaction and minimizes staff frustration.

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Hartford Hospital was able to increase early, 11 a.m. discharge from 9.5 percent to 25.6 percent within seven months through the development of a multidisciplinary program that includes the use of a business intelligence (BI) dashboard that delivers real-time analytics on patient throughput. The dashboard has the potential to increase Hartford's daily census, lower cost per case, improve patient satisfaction and minimize staff frustration over bottlenecks.

Hartford Hospital is an 867-bed regional referral center with an annual inpatient volume of 57,000, outpatient volume of more than 2 million, 11,000 employees and \$1.4 billion in total network revenue. In addition, we continue to gain market share, seeing 2 percent more patients in 2010 than we did in 2009.

Offloading from the ED

With the second-largest emergency department in Connecticut (95,267 annual visits), we needed a way to offload patients quickly from the ED to more appropriate levels of care while better managing length of stay and promoting earlier discharge. We also needed to access real-time data for a more structured approach to patient management, to manage clinical and financial data more efficiently, to monitor and track performance in multiple areas and to build a data warehouse.

We envisioned a clinical, operational and financial environment where we could operate from quality metrics, benchmark performance against national standards, track internal performance gains against baseline and optimize patient care based on real-time data.

Working with an implementation group of managers and staff from clinical care, decision support and information technology, the hospital evaluated three vendors on the criteria of size, current products and future enhancements; applicability to patient-care needs and flow; and ease of use, fluidity and graphic presentation. After a six-month evaluation process, the hospital chose Carefx, which had acquired the rights to market and further develop a suite of six business intelligence tools from a Cleveland Clinic start-up in 2010.

The patient throughput dashboard allows physician

groups, units, unit clusters and individual healthcare professionals at Hartford Hospital to identify patient-flow trends and opportunities that would increase early discharge and reduce length of stay. Rather than dealing with multiple sources of information, report delays and text-based presentations, physicians, nurses and other professionals now view near-real-time information in graphic detail so they can quickly compare their performance to hospital and department baselines.

The dashboard also facilitates communication between Hartford Hospital and its physicians. By identifying problem diagnoses, areas and floors, the hospital can quickly invest resources to enhance patient flow. By offering physicians immediate feedback on length of stay, readmissions and order entry, the hospital is able to comply with parts of the ongoing professional practice evaluation process for re-credentialing as mandated by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO).

Benefits for physicians, nurses, CMO

At Hartford Hospital, we pull both inpatient data from multiple systems, including patient billing, bed management and transport, and transfer it into the patient throughput dashboard via a weekly feed. The dashboard translates data into metrics, helping our professionals hone in patient-flow problems and identify best practices for application to lower-performing individuals, units and groups.

After only nine months of using the new BI patient throughput dashboard, the 24 users were surveyed and:

- 70 percent reported they were actively using dashboards (weekly);
- 90 percent claimed improved ability to manage work-flow; and
- 100 percent claimed the dashboard saved them time on data gathering and report generation.

We also generate group and individual report cards for our 26-member hospitalist group. If a physician underperforms on order entry, readmissions or length of stay, the department and division chiefs share relevant data in a one-on-one conversation. Quarterly reports seem to be

the most effective in pinpointing variations in individual and group physician performance.

Nurses also benefit from weekly, monthly and quarterly reports that cover performance on all units and floors. The throughput dashboard tracks unit progress on 11 a.m. discharge initiatives, forcing conversations over how to expedite discharge through actions, such as a designated discharge education nurse, early tray delivery and enhanced patient transport systems.

The patient throughput dashboard offers us a way to communicate targets, expectations and best practices to clinical and operational staff. By letting people know how they stack up against hospital expectations, they're better able to receive feedback and make the kind of changes that improve care delivery and patient flow.

Implementing BI dashboards: Lessons learned

Here's our advice on how to implement BI tools to solve challenges, such as patient throughput:

- Evaluate the overall impact of dashboard performance as well as factors, such as ease of use, intuitive graphics, drill-down capability, data accuracy, training and addressing patient flow needs.

- Assemble an early discharge multidisciplinary committee or task force to conduct a weekly review of early discharge numbers and improvement strategies.
- Populate the evaluation or implementation team with department leaders, practice managers and division chiefs who may not understand the mechanics of BI but would benefit from the information produced.
- Seek out a vendor that will work with the hospital or health system to personalize the dashboard and metrics.
- Take a phased approach to implementation. Begin with eight to 10 dashboard metrics, and gradually add more as adoption takes hold.
- Rely on annual balanced scorecard objectives to decide on how dashboards will be used in the future.
- Gradually add enhancements such as case mix, attending assignment and admission (diagnosis-related group). **HMT**

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