HIMSS Analytics

HIMSS Analytics Stage 7 Case Study

Sparrow Health System

Profile

Sparrow, a member of the prestigious Mayo Clinic Care Network, is mid-Michigan's premier health care organization and the region's largest private employer. Sparrow has two Lansing campuses and hospitals in St. Johns, Ionia and Carson City, as well as dozens of ambulatory care centers, Physicians Health Plan, Sparrow Physicians Health Network, Sparrow Medical Group, and the Sparrow Michigan Athletic Club. Sparrow is affiliated with Michigan State University's three human health colleges.

Sparrow Hospital, the flagship of Sparrow Health System, is the regional center for cancer, trauma, pediatrics, orthopedics, neonatal intensive care and neurological care. Sparrow is a Magnet Hospital, with a Level 1 Trauma Center, Neonatal Intensive Care Unit, a Joint Commission Certified Comprehensive Stroke Center and a Bariatric Surgery Center of Excellence. Sparrow was also ranked #1 by InformationWeek 500 in 2012 for health care technology innovations and was named to the Hospitals & Health Networks 2014 "Most Wired" List. HIMSS Analytics EMR Adoption Model^{sm} Stage 7 status was granted to Sparrow Hospital and 26 of its ambulatory offices on Nov. 4, 2014, in recognition of our advanced Electronic Medical Record (EMR) adoption and use, a designation that reflects Sparrow's commitment to the highest levels of Patient safety and quality care.

The Challenge

As part of Sparrow's transition from paper-based charting supported by disparate ancillary health IT products to an enterprise-wide, highly integrated clinical information system, we saw an opportunity in our preparations for ICD-10 to promote clinical documentation improvement (CDI) among Physicians, as well as providing our coding staff with tools to facilitate enhanced clinical coding accuracy and efficiency. Like many health systems, Sparrow struggled in a paper-based charting system to ensure that Physician documentation fully reflected each Patient's conditions and comorbidities while also supporting coding requirements.

Prior to EHR implementation, our CDI approach was largely limited to conducting repeated provider educational sessions and delivering CDI queries on paper forms in the Patient's chart. Our CDI and coding processes were inefficient and the results did not adequately reflect our true case mix index, expected vs. observed length of stay, medical complexity and comorbid conditions. We knew it would be difficult for Physicians to retain and consistently document in a way that supported coding requirements, so we created intuitive, efficient, EMR workflow-integrated tools for providers to facilitate improved clinical documentation. We also provided our CDI specialists with tools to help them create and track Physician replies to coding queries. Finally, we provided our coding experts with computer-assisted coding (CAC) and decision support tools to boost the speed, accuracy and ease with which they could code hospital inpatient and hospital outpatient encounters.

Our specific goals and objectives included:

- Better provider clinical documentation of disease severity, specificity, complexity, and comorbidities
- More efficient clinical query workflows for CDI specialists
- Increase Physician replies to CDI queries
- Improve coding accuracy, completeness, efficiency and timeliness
- More accurate data on case mix index, observed vs. expected mortality, expected length of stay
- Enable remote coding to improve coding specialist efficiency and satisfaction
- Liberate space previously occupied by coders and paper charts for centralized CDI specialist team

Implementation Overview

Electronic Medical Record: We implemented registration, scheduling and revenue cycle solutions from *Epic* in 2010, with ambulatory EMR go-lives completed in a phased manner during 2010 and 2011. In December 2012, we completed an inpatient and emergency department *Epic* go-live across all hospitals, including medical and surgical units, pharmacy, surgery, labor and delivery, radiology, interventional cardiology, and critical care. Intraoperative anesthesia and hospital outpatient department go-lives followed in 2013 and 2014.

Clinical Documentation Improvement (CDI): We implemented *Claro CDR*^{2} software for CDI workflow management, tracking and reporting at Sparrow Hospital in August 2013, followed by Sparrow Specialty Hospital in May 2014. We established an ADT interface from *Epic* to *CDR*^{2} and created coding query standardized CDI message language. We delivered CDI refresher training for Physicians and also provided them with efficient documentation templates (cascading CDI SmartPhrases) that supported both our CDI goals and ICD-10 documentation requirements. We retired paper CDI queries and replaced them with In-Basket messages that made CDI query delivery and physician replies easier and more efficient. We also implemented EMR functionality to flag CDI queries when Physicians answered them so CDI specialists could more easily track them to completion.

Computer-Assisted Coding (CAC): We implemented the *Optum Enterprise Computer-Assisted Coding Platform* for both hospitals in May 2013. *Optum Enterprise CAC* is a natural language processing (NLP)-supported CAC solution that reads clinical documents in real-time and creates lists of supported diagnoses. The listed diagnoses contain links to the patient's EMR chart documents with highlighting of key words and phrases in each document. It also includes coding decision support to facilitate proper DRG assignment, as well as knowledge resources and flags to alert coders when new regulatory updates are available for a diagnosis. *Optum Enterprise CAC* also flags an account when a new document comes into the chart after CAC has been completed, enabling additional coding specialist review to ensure continued coding accuracy. Remote coding commenced in June 2014, enabling 33 staff members to work from home and liberating space for CDI specialists to work in a central location.

"The EMR has afforded us the ability to implement additional electronic tools to add efficiencies to our workflows. Overall, every area of the HIM department has been positively impacted. Achieving HIMSS Stage 7 is very rewarding for all of our Caregivers. It recognizes the teamwork, efforts and dedication we have demonstrated during our journey."

– Lisa Priest, RHIA; Director of Health Information Management and Patient Access, Sparrow Health System

Resulting Value / ROI

Tangible ROI

- Medicare Case Mix Index (CMI) increased from 1.63 to 1.67.
- Positive financial impact of $5 million from September 2013 to December 2014, due to increased Case Mix Index resulting from CDI and CAC-supported workflows.

- Percentage of charts reviewed by CDI specialists increased from 80 percent to 100 percent using the same number of CDI specialists, even after adding Sparrow Specialty Hospital and Patients insured by Blue Cross.
- Physician response rate to CDI queries increased from a baseline of 60 percent to 92 percent after implementation of EMR-supported CDI and CAC processes. These processes are now completely electronic.
- Average coding turnaround time after discharge decreased by three days.
- Decreased days in Accounts Receivable (AR) and increased days cash-on-hand.

Intangible benefits:

- Increased Physician buy-in with a standard CDI query approach
- Better reporting of physician CDI query response rates
- Decreased charting delinquencies
- Caregiver satisfaction increased, attributed to higher efficiency with electronic tools and workflows

Lessons Learned

1. Successful implementation with desired results requires understanding and agreement around business processes and how health IT systems can support them. Identifying and overcoming communication barriers to ensure understanding and promote buy-in is one of our key success factors.
2. Executive level support and involvement were critically important to our successful CDI program.
3. Remember the value of Plan-Do-Check-Act (PDCA) cycles of improvement and continue to get feedback and fine tune systems and processes after implementation.
4. Communicating the advantages and expected benefits to affected Caregivers throughout the implementation process creates positive engagement, anticipation and commitment.
5. Involving frontline Caregivers during system build and testing helps ensure successful implementation, improved processes and high user satisfaction.

> *Achieving the highest level of EMR and health IT adoption improves quality and safety as well as Patient satisfaction and value. We could not have achieved this without an amazing, dedicated team, focused on innovation that matters for our Patients and the community.*
> ***TOM BRES***
> *Senior Vice President & Chief Administrative Officer*
> *Sparrow Health System*