The Computerworld Honors Program

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Final Copy of Case Study

YEAR:
2012

STATUS:
Laureate

Organization:
Cherokee Indian Hospital

Organization URL:
www.facebook.com/pages/Cherokee-Indian-Hospital/

Project Name:
Implementation of an Electronic Medical Record to Improve the Quality of Health Care for the Eastern Band of Cherokee Indians

What social/humanitarian issue was the project designed to address? What specific metrics did you use to measure the project's success?

Cherokee Indian Hospital is the primary medical home for the over 14,000 members of the Eastern Band of Cherokee Nation. The Eastern Band of Cherokee Nation is a federally recognized American Indian tribe located in the rural, mountainous portion of western North Carolina. The Mission of the Cherokee Indian Hospital is to be the health system of choice for members of the Eastern Band of the Cherokee Nation by providing accessible, quality healthcare in a caring, culturally sensitive and healing environment through responsible management of the tribal resources. Cherokee Indian Hospital has previously used health information technology to demonstrate improvements in health measures key to decreasing morbidity and mortality from cancer, domestic violence, alcohol abuse, heart disease, stroke, and pneumonia. Most recently, a specific focus was undertaken to implement the Electronic Medical Record in the Emergency Department. The immediate goal was to improve patient satisfaction and to decrease wait times. Specific metrics for success of the Emergency Department implementation include customer satisfaction scores and directly observed patient flow measures. Customer satisfaction was measured by direct telephone patient surveys, with scaled scores for excellence. Measures were collected for patient registration experience, nursing care experience, physician care experience, discharge experience, and overall impression. The survey provided scaled scores for responses to statements about the patient experience. Patient flow measures were directly observed times

and include median time-to-triage, median time-to-provider, and median door-to-door time. Left-without-being-seen rate was also measured.

Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.

Cherokee Indian Hospital utilized the Indian Health Service Resource Patient Management System (RPMS) Electronic Health Record. This electronic medical record system was implemented in the primary care clinic at Cherokee Indian Hospital in 2005, followed by the inpatient unit in 2009, and finally the Emergency Department in October of 2010. This deployment in October of 2010 was the first full-scale deployment of the IHS RPMS-EHR in a hospital emergency department. This was a proof-of-concept implementation for this system. Cherokee Indian Hospital has previously demonstrated excellence in implementation and utilization of the RPMS-EHR, showing improvements in 10 different measures impacting overall population health, winning the HIMSS Davies Award for Excellence in Public Health in 2008. This positive global recognition has led to additional attention to and subsequent adoption of the IHS Electronic Health Record (RPMS-EHR) by health systems both inside and outside of the Indian Health Service. Implementation of an electronic medical record in an Emergency Department has special challenges, as it required training of multiple providers, nurses, and support staff on multiple shifts; it required coordination across ancillary departments such as radiology, lab, and pharmacy; and it required the development of unique documentation routines for nurses and providers that were appropriate to the emergency setting. Most important to the success of the project was the feedback and utilization of flow data by the team to actively work on improvements in patient flow and patient satisfaction.

Please list the specific humanitarian benefits the project has yielded so far.

The Emergency Department at Cherokee Indian Hospital serves 17,000 patients annually, with the vast majority of those patients being enrolled members of the Eastern Band of Cherokee Indians. Over the past 12 months, the Improvement Team has made significant improvements in both patient throughput measures and customer satisfaction measures. The team has decreased the Emergency Department (ED) median door-to-door time from 132 minutes to 93 minutes (beating the national benchmark by 63 minutes). The median time-to-provider in the ED has decreased from 60 minutes to 27 minutes (beating the national benchmark by 6 minutes) (Appendix 1). The number of patients waiting more than 3 hours to see a provider decreased from 7% to 1% (beating the national average of 4%). The number of patients waiting more than 2 hours also decreased from 18% to 4% (beating the national benchmark of 9%) (Appendix 2). The Left Without Treatment rate dropped from over 5.7% to 2.2%. Patient satisfaction scaled scores improved in all areas measured (Appendix 3). Patient registration experience improved from 77.9 to 90.5 (16% improvement), nursing care experience from 88.1 to 94.5 (7% improvement), physician care experience improved from 84.5 to 91.6 (8% improvement), discharge experience improved from 80 to 87.2 (9% improvement). Data outputs from the EHR have been utilized to develop and employ a system of measurement, feedback, and management utilizing quality measures as an element of staff performance appraisals. This work can become a replicated model throughout the Indian Health System, improving quality of and access to care not only for this community, but for others throughout the nation.

Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.

Over the past year since implementation of the Indian Health Service RPMS-EHR in the Cherokee Indian Hospital Emergency Department, the department has made significant improvements in patient throughput measures and customer satisfaction measures. Wait times are dramatically improved, fewer patients leave prior to receiving treatment, and customer satisfaction is significantly improved. Outcomes have been shared with the Governing Board and with the community in newspaper articles and in televised sessions of Tribal Health Board and Tribal Council Meetings with great success. Outcomes have been shared throughout the Indian Heath Service through the Quality and Learning Improvement Network in the IHS Improving Patient Care initiative. Cherokee Indian Hospital has furthered its reputation as a leader in adoption of technology including the RPMS-EHR, bar-coding medication administration (BCMA), and the iCare tool for population management, hosting visiting delegations from as far away as Alaska and Hawaii. Cherokee Indian Hospital has facilitated the development and testing of numerous software applications, including beta-testing of the RPMS-EHR, iCare, BCMA, and proof-of-concept for and subsequent implementation of inpatient use and emergency department use. Cherokee Indian Hospital also led alpha-testing of the well child PCC+, the prenatal care PCC+, and the EHR well child GUI. Commitment to the development of additional functionality within the HIT solution for the Indian Health Service has resulted in a cost savings to the Office of Information Technology of over a million dollars. Moreover, the contributions of Cherokee Indian Hospital staff to improved appropriate functionality and usability of health information technology software is invaluable. Their recommendations have been integrated into software applications that are used at over 400 sites that provide care to over 1.5 million Native American beneficiaries.