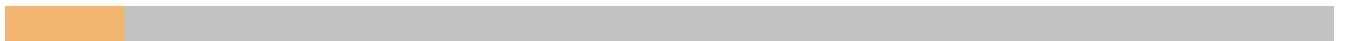![HIMSS Analytics]

HIMSS Analytics Stage 7 Case Study

Avera Health System

Profile

Avera Health System comprises over 15,000 health professionals and support staff, including over 1000 physicians and advanced practice providers committed to the mission and vision of caring for patients in 7 states for over 100 years. Avera provides an array of services to meet the needs of more than 2.2 million residents in the upper Midwest with the base of operations in Sioux Falls, South Dakota.

Avera represents many physician specialties and 10 clinical services lines in 5 geographic regions of care. These regions represent 38 hospitals, 21 long term care facilities, 160 clinics, with integrated home health, and the award winning Avera eCARE telehealth service.

All Avera facilities share a common, faith-based mission and vision, centered on ministry, people, quality, service and financial stewardship. Avera is committed to delivering evidence based medicine increasing the quality, safety and efficiency of care to our patients.

The Challenge

The Upper Midwest is rural in its setting. Vast distances exist between care facilities for many of our patients. Avera Health has harnessed technology to offer electronic alternatives for patients to minimize travel from their home community to a larger, urban center.

Avera Health has a long-term commitment to health information technology. Avera has been HealthCare's Most Wired and Wireless since their inception for a total of 14 and 10 times respectively. In addition, Avera won the Most Wired Innovator Award in 2011 and 2012 for Avera ePharmacy and eEmergency services. Avera Health has placed a strong emphasis on system integration. Our Avera Electronic Medical Record (EMR) is based on a single, integrated record for each patient across the entire Avera Enterprise. In addition, over the course of the MEDITECH implementation, Avera's largest hospital, Avera McKennan, has achieved American Nurses Credentialing Center Magnet status four times, placing them in an elite class of less than 30 hospitals in the world.

Implementation Overview

In 2006, Avera embarked on an enterprise EMR selection process.   We chose to continue our sixteen year relationship with MEDITECH. The contract was signed in 2006. In November 2007, five hospitals went live with the MEDITECH Client Server platform. We deployed all clinical, financial and administrative modules. To complement this implementation, physician and nursing leadership was established in IT. At this same time, Avera went live with diagnostic radiology picture archiving and communication system (PACS) in all settings of care. From 2007 to 2014, Avera also installed what was then Lake Superior Software (LSS) and now MEDITECH Ambulatory in all of its ambulatory clinics.   Other vendor partners include Nuance®, GE Centricity™, Phillips VISICU® and Xcelera, OBIX Perinatal Data System®, ProVation® Medical and QuadraMed®.
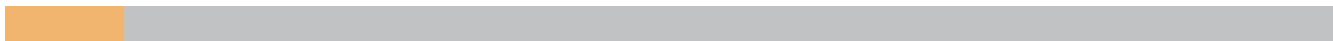
Progress and Innovation

In the fall of 2010, Avera began its computerized physician order entry (CPOE) implementation. We partnered with Zynx Health™ to provide content. A physician governance structure was created. Physician Review Teams (PRTs) were responsible for reviewing and maintaining content of order sets and electronic documentation templates (pDoc). These review teams included a pharmacist and nurse. In the fall of 2011, Avera went live with CPOE and electronic provider documentation in all hospitals. We have maintained greater than 90 percent utilization of CPOE and greater than 80 percent utilization of pDoc. As part of this implementation, electronic prescribing of medications was implemented in all hospitals and clinics. We currently are sending more than 10,000 electronic prescriptions per week.

In 2012, Avera began its journey "Transforming Patient Safety, One Scan at a Time: Every Patient, Every Medication, Every Time" to 100 percent bedside barcode medication verification (BMV). We utilized lean and Six Sigma principles throughout the implementation. This process reduced the severity of medication errors by 33 percent.

Avera partnered with the South Dakota Health Information Exchange (HIE) in 2014. To date, we have exchanged messages with 34 Health Information Services Providers (HISP), sent and received over 350,000 Direct message transactions with 1100 providers accounting for 189 facilities. Two highlights of this project include working to coordinate long-term care with patient discharge instructions, medication lists, and follow-up care and using Direct messaging to the South Dakota QuitLine for smoking cessation referrals.

In 2014, with a state grant, Avera and MEDITECH partnered with the South Dakota Department of Health to create a bidirectional interface to the state immunization database. This one of the nation's only bidirectional immunization interfaces. This has created enormous efficiencies for our hospitals and clinics as well as preventing duplication of immunization for patients.

In 2015, Avera McKennan has implemented VOALTE® as our inter-provider communication platform that lets care teams inside and outside the hospital access and exchange information securely. VOALTE® the vendor, is also an acronym for voice, alert and secure text, combining these methods of communication into one application. Connexall® is the middleware for alerts from equipment (patient monitors, nurse call) and critical lab values from MEDITECH. We have the ability to assign appropriate patient care staff to appropriate alarms. Alarm escalation and cancellation is bi-directional with secure text.

The Avera Clinical and Business Intelligence group has created multiple dashboards, supported by our Health System's Data Repository (DR). Meaningful Use Measures and National Quality Measures for HAC/HARM events, including Ventilator Days, Foley Catheter Days, Central Line Infections, Catheter-Associated Urinary Tract Infections, Antibiotic Utilization and C. difficile rates are electronically abstracted, completely eliminating manually abstraction, allowing for aggressive local performance Rapid-Cycle-Process-Improvement by our clinicians. Avera Health is extending the power of the DR and analytics into additional System strategies, including predict appropriate staffing models and Sepsis care. Avera Health is one of one hundred hospitals selected by CMS to participate in the eCQM, electronic submission of Clinical Quality Measures.

Avera has incorporated personalized medicine and pharmacogenomics as clinical decision in provider workflow. Our primary focus to date has been on metabolism of opioids, neuropsychiatric medications, anti-platelet therapy, and tamoxifen for breast cancer. Prior to surgery or treatment, a genetic profile is performed at the Avera Institute for Human Genetics. A Personalized Pharmacogenomics Report, including medication recommendations based on the patient's genetic profile, personal health history, and home medications is completed in Physician Documentation (Pdoc). This report is sent electronically to the ordering provider. Rules were built in both acute and ambulatory ordering modules to alert providers with the patient's genetic profile results when ordering these medications.
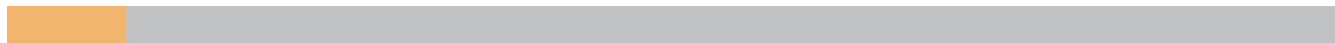
Resulting Value / ROI

Avera Health has successfully qualified for Meaningful Use Stage 2 for 100% of its hospitals and 98% of its providers. We completed attestation for Stage 1 (both years) as well as Stage 2, Year 1 and will attest to the same percentages for Stage 2 Year 2.

We have significantly reduced our hospital transcription by 90 percent, resulting in reduced costs for chart handling, paper charts and personnel assembling those charts. The HIM department has saved over ten million dollars since implementation of pDoc in 2011. Space that was dedicated for these activities has now been transformed into revenue generating space for our radiology service line.

With a fully integrated EMR across all environments of care, we have seen a significant reduction in days in accounts receivable.

The recent implementation of ICD-10 for the Avera system was a "non-event."   Avera has seen no change in number of queries to providers and reimbursement rates over the last three months of 2015 have remained stable.

Lessons Learned

With the 2007 MEDITECH implementation, there was a corporate decision to create multiple health care information system (HCIS) databases based on five geographic regions. This was not recommended as best practice; however, the corporate environment at Avera during those years lent itself to this decision.   Over the years, this structure has created many difficulties with exchange of data, standardization of workflows within our organization. Avera is currently implementing the MEDITECH 6.1 platform. This will be a single database implementation.

HIMSS Analytics Stage 7 "healthcare organizations support the sharing and use of patient data that ultimately improves process performance, quality of care and patient safety. Clinical information can be readily shared via standard electronic transactions, with all entities within health information exchange networks. This stage allows the healthcare organization to support the true sharing and use of health and wellness information by consumers and providers alike." We strive to be OneAvera in all aspects of care. The electronic medical record is no exception. Avera continues to make every effort to be completely paperless in all facilities with the interests of our patients, front and center of everything we do.