



Medical University of South Carolina – Motion™ C5 MCA Case Study

Challenge: The Medical University of South Carolina (MUSC) is a free standing, academic medical center located in Charleston, SC. Comprised of three hospitals including a 596-bed adult hospital, a 156 bed children's hospital, and a 90-bed psychiatric hospital, MUSC provides a wide range of primary care and specialty services to over 33,000 inpatients a year. In early 2008, MUSC will open its newest hospital, a 156-bed cardiovascular and digestive disease hospital. MUSC is also home to a 500-physician practice plan and educates health profession students from six colleges including medicine, nursing, pharmacy, dental medicine, health professions and graduate studies. MUSC employs nearly 10,000 staff and educates 3,000 students a year.

The clinical care component of MUSC's mission is to provide high quality, cost effective patient care in a safe environment. To aid in accomplishing this goal, MUSC is currently implementing a host of clinical applications including McKesson's Horizon Expert Documentation system known internally as ClinDoc for nursing documentation and Horizon's AdminRx for bar coding medication administration. Computerized provider order entry (CPOE) will follow in 2008.

Solution: Earlier this year, MUSC partnered with McKesson, Motion and Intel to develop a mobility solution for clinical documentation and bar code medication administration. The key drivers for this project included updating clinical information systems with advanced technology to enable continued improvements in quality, safety, and efficiency and to support MUSC's effectiveness in complying with outside regulatory agencies and accreditation standards. MUSC's overarching goal is to optimize patient care by streamlining workflow for clinicians and improving staff satisfaction. MUSC also hopes to differentiate itself in the market, and aid in the recruitment and retention of the best and most talented staff and students. Finally, the results of this collaboration will further promote MUSC's tri-part mission of clinical service, education, and research.

MUSC's initial goals for the project were to (1) improve the efficiency and accuracy of patient documentation, (2) optimize workflow, and (3) increase clinician (nurse and physician) satisfaction.

Results: Five nurses were trained by an MUSC faculty researcher to conduct an observation study of patient care technicians as they made their scheduled vital signs rounds. The nurse observers made note of the time the vital signs were taken, time documented in patient's medical record, and the accuracy of the vital signs recorded. A total of 270 patient observations were made in three different stages: (1) paper based environment, (2) ClinDoc with fixed device in hallway, (3) ClinDoc with C5 affixed to Motion C5. Preliminary results indicate a decrease in the transcription error rate from 25% to 7% when documenting at the point of care using the Motion C5, and the amount of time difference from when vitals were taken to when they were available in the patient's record dropped from an average of over 9 minutes (in stage 2) to less than 30 seconds with the Motion C5 devices (stage 3). Both set of preliminary results are statistically significant at the $p < .05$ level.

Phased roll-out of Horizon clinical documentation, bar code medication administration software and the Motion C5 MCA is currently underway throughout MUSC.