



The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

Status:

Laureate

Year:

2013

Organization Name:

UPMC Mercy Hospital

Organization URL:

www.upmc.com/mercy

Project Name:

Smartphone Use in Bedside Patient Care

Please select the category in which you are submitting your entry:

Innovation

Please provide an overview of the nominated project. Describe the problem it was intended to solve, the technology or approach used, how it was innovative and any technical or other challenges that had to be overcome for successful implementation and adoption. (In 300 words or less.)

Our project originated from the challenges in communication between providers, nurses and ancillary clinicians. With the ever-increasing use of the electronic medical record, it has become more and more important to improve efficiency, alerting and communication between healthcare providers. The technology of computerized provider order entry, electronically scheduling tests and electronic notification of patient transport has made it imperative for immediate notification and improved communication. A mobile communication solution was the technology needed to facilitate these challenges and in particular the use of smartphones at the bedside. Smartphone technology and application development has also assisted in positive patient outcomes by alerting staff more

timely for orders, STAT orders, telemetry (cardiac monitoring) conditions and patient transporting.

When was this project implemented or last updated? (Please specify month and year.) Has it incorporated new technologies and/or other innovations since its initial deployment? (In 300 words or less.)

Project development and implementation began with our Transport Department at UPMC Mercy in September 2009. Since initial project implementation, additional Smartphone applications have been added and the deployment has gone hospital wide to all nurses and ancillary departments within our hospital. Our first nursing unit pilot began in March 2010 with nurses having access to their patient list on their smartphone and being alerted when providers enter orders and Stat orders into our clinical system. An employee and department Directory application was created in May 2010 which made it much more efficient to find other healthcare providers' contact information, especially physicians, and contact them quickly. In October 2010, we went hospital wide with our smartphone technology. A new directory for our Charge Nurses' smartphones was added in January 2011. Latex allergy alerting began in March 2011 with an icon appearing next to each patient on a nurse's list that had a latex allergy. Telemetry alerting and bed assignment (Self-Assign) applications were piloted in July 2011 on one nurse unit. The Self-Assign application went hospital wide in August 2011 and the Telemetry application went hospital wide in September 2011. Self-Assign allows our nurses to assign their own patients on their smartphones. The Telemetry application allows the centralized telemetry department to send alerts to the nurses. Another application called CHAT was piloted in February 2012 and went hospital wide in May 2012. CHAT is an application created to enable clinicians to securely text message one another. This allows two-way communications between clinicians and the messages are logged and can be audited if necessary. The most recent application developed for our Smartphones was the NIH Stroke Scale in June 2012, which provides the clinician an assessment tool that determines a quantitative measure of stroke-related neurological deficit.

If this is a previously submitted project that has been significantly updated and/or expanded, please describe the nature of the update here. (In 300 words or less.)

This project has never been submitted to Computerworld.

Is implementation of the project complete? If no, please describe the project's phases and which phase the project is now in. (In 300 words or less.)

Implementation of our project is ongoing. The first phase of implementation in September 2009 began with our Transport Department. Smartphones replaced pagers and made the transporters' job more efficient by notifying them of patient appointments ensuring on-time arrivals. With this technology, our transporters' time is used effectively and as a result they are able to complete additional patient transports and are readily able to contact their dispatcher. Transporter productivity increased over 20% as a result of smartphone usage. Our second phase of implementation in March 2010 included order alerting for our nurses. Nurses are alerted via their smartphones when providers enter orders and Stat orders into our Clinical Information System (Cerner). Before this was created, nurses had to frequently check Cerner via their computer and review new orders for their patients. This alerting greatly increased the timeliness of nurses receiving order information that they can immediately act on. Phase three implementation included development of our Telemetry alerting application in July 2011. This Telemetry application has improved communication between the central telemetry department and nursing creating better patient outcomes. The telemetry department sends an alert to the patient's assigned nurse's smartphone when a telemetry condition occurs. The nurse immediately goes to the patient to respond to the condition and acknowledges the alert via the smartphone. This application escalates the alert if the nurse does not acknowledge it within three minutes. Information Services and Nursing meet monthly to discuss refinement of our current applications, creating new applications and continually improving clinical processes.

Please provide at least one example of how the technology project has benefited a specific individual or organization. Feel free to include personal quotes from individuals who have directly benefited from the work. (In 300 words or less.)

A patient from our Orthopedics nursing unit fell out of bed and became unconscious. As a result, the Telemetry department alerted the patient's nurse via her smartphone for leads off, as the leads had come off the patient during the fall. The nurse upon receiving the alert went to check the patient and discovered that the patient was unconscious and was able to assist the patient and avoid a bad patient outcome. In this example, our smartphone technology positively impacted patient care.



Would this project be considered an innovation, a best practice or other notable advancement that could be adopted by or tailored for other organizations and uses? If yes, please describe that here. (In 300 words or less.)

The use of the Smartphone at the bedside would be considered an innovation. We have developed many applications for the smartphones. A multi-disciplinary team, consisting of Information Technology, Nursing, Radiology, Laboratory, Transport and other Ancillary departments, was created to review multiple clinical processes and how they could be better utilized or improved by the use of smartphones. Because of our smartphone technology and development we have established an environment with improved communication between our healthcare providers, including nurses, physicians and ancillary clinicians. We have increased productivity and efficiency in our transport area. We have improved patient outcomes with use of telemetry and order alerting.

If there are any other details that the judges should know about this project, please note them here. (In 300 words or less.)

Our smartphone technology has all been developed internally and all ideas and workflow have come from within our organization. This project has provided us much efficiency universally throughout our hospital for all nursing and ancillary areas including: the admission nurses, phlebotomy, radiology, transport, IV team. Most importantly, this project has provided a time savings for our clinicians and especially our nurses to spend more time in the care of their patients.