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Final Copy of Case Study

Status:
Laureate

Year:
2013

Organization Name:
Miami Children's Hospital

Organization URL:
www.mch.com

Project Name:
Telehealth Project

Please select the category in which you are submitting your entry
Emerging Technology

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.)

As a national leader in emerging healthcare technology, Miami Children's Hospital (MCH) has launched an innovative telehealth project that will dramatically expand its service "footprint," create new business opportunities, and deliver specialized care to medically underserved communities in South Florida and Latin America. This multifaceted project fully integrated with the hospital's electronic medical record (EMR) system also accelerates the movement of clinical data and improves coordination of care by combining three components of emerging technology: 1. MCH Global Telemedicine Command Center. Incorporating advanced voice, data and video technology over a broadband wireless network, the telemedicine center allows MCH's specialists to examine, diagnose and treat patients, consult with primary care physicians, write e-prescriptions, and assist paramedics preparing a child for air ambulance transport. With its robust communications infrastructure, the command center also enhances the region's medical surge capacity, coordinating a rapid and effective response to a pandemic or natural disaster. 2. Smart mobile health applications. Drawing on the

expertise of its pediatric specialists and deep knowledge of medical workflows, MCH is developing a suite of interactive smart mobile health applications to enable patient self-monitoring and medication compliance, as well as supporting healthy behaviors. 3. Interactive mobile equipment and devices. MCH is deploying a suite of interactive mobile equipment and devices purpose-fit for specific uses and fully integrated with the MCH data network. That includes iPad tablets for patients and medical teams, mobile robots with interactive video capabilities, diagnostic medical carts for physician offices, medical kiosks within retail stores, and field kits for post-disaster recovery operations. Prior to the successful implementation of the telehealth project, MCH's IT team found solutions to the following challenges: building an internal consensus, identifying and piloting potential technologies, training physicians, designing and building the global command center, and raising community awareness of these new MCH telehealth services.

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.)

Led by a dedicated project team with strong support from senior leadership, MCH developed its telehealth strategy, created its first mobile applications and began piloting emerging communications technology in 2011. With the success of those initial steps, MCH launched its project operational plan, focusing primarily on capital projects, including the telehealth command center and other infrastructure components, as well as hiring additional operational resources. MCH completed the first phase of the project in November 2012 with the opening of the MCH Global Telehealth Command Center. Utilizing the hospital's high-speed broadband wireless network and advanced contact center technology, the 2,400-square-foot telehealth center (Appendix 1) is fully operational and ready to support the next phases of the project. In 2012, MCH also developed its first smart mobile application, "Scripter," (Appendix 2) whose goal is improved patient compliance prescribed medications and other doctors' orders. It will incorporate informational, motivation and compliance-inducing components, such as the ability to auto-call a parent's phone if a child skips a medication dosage, and photos and graphics to help ensure patients and families understand the physician instructions. Scripter was developed in English, using an active loop technology designed for convenience. A Spanish version of the application will be developed shortly. In addition, the MCH information technology team developed two smart mobile apps, one for patients and family members (Appendix 3) and one for physicians, that allow users to connect directly to the MCH Global Telemedicine Command Center. Along with completing the IT infrastructure to support smart mobile health applications, interactive mobile devices and other services, MCH in 2012 signed telehealth partnership agreements with health care providers in Colombia, Peru and Ecuador. This is a major step toward expanding MCH's telehealth project to serve international physicians and patients in the Caribbean, Latin America and around the world.

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.)

N/A

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.)

In 2013, MCH will leverage its telehealth capital and staffing investments to roll out additional telehealth services, deploy interactive mobile devices and smart mobile health applications that facilitate access to quality care. The next phases of the telehealth project include: Application development. MCH will roll out its interactive iPad application for traveling families, as well as a consultative iPad app for primary care physicians. The 2013 project plan calls for these apps to be tested first with MCH employees and their children. MCH is also developing other mobile apps addressing asthma, diabetes, mental health, obesity and fitness. Deploying retail kiosks. Through partnerships with South Florida retailers, property owners and landlords, MCH plans to open retail medical kiosks, staffed by nurses and physician assistants, for easy and convenient access to specialist physician services. Recruiting community physicians. MCH will offer its new video-enabled clinical digital resources to community pediatricians, starting with physicians now affiliated with the hospital. This will involve the placement of mobile medical carts in primary care and pediatric offices, as well as the utilization of any existing videoconferencing capabilities. Building partnerships with area schools, community agencies and other organizations that serve the medically needy, facilitating care for families that now find it difficult to access "bricks and mortar" healthcare facilities. For example, mobile diagnostic carts or the mobile robots could be deployed to school health clinics, homeless shelters, faith-based organizations or community agencies. Building public awareness. MCH will raise public awareness of its telehealth services through its digital, social media and traditional public relations channels. MCH has been a leader in the South Florida market in using social networking sites, such as YouTube, Facebook and Twitter to connect with patients and families.

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.)

In piloting its telehealth project, MCH has already demonstrated the potential of this emerging technology to accelerate and enhance the delivery of specialized medical care in a cost-effective manner. For example, Andrea Maggioni, MD, Ph.D, MBA, Director of Global Health, serves as the medical director for a Russian orphanage, using the MCH telehealth platform to oversee care from his MCH office nearly 7,700 miles away. Through an affiliation with the Moscow Center for Pediatric Craniofacial Surgery and Neurology, the specialists at the MCH Brain Institute also provide consultations to Moscow physicians. In addition Dr. Maggioni also serves as Consultant for International Relations for the Pediatric Hospital Bambino Gesu in Rome, Italy. MCH's telehealth project is already connecting the hospital's specialists with physicians, nurses and medical teams in the Caribbean, Latin America and beyond. For example, MCH specialists advise local doctors on stabilizing high-risk babies prior to transporting them to the hospital's intensive care unit. Future benefits of the telehealth project will include: Better monitoring of chronic care cases through proactive case management, reducing the number of emergency admissions and hospitalizations. Providing follow-up pediatric care through virtual checkups, saving time and expense for family members as well as insurance payers. Evaluating acute conditions such as coughs, fevers or seizures.

Managing acute psychiatric problems. Delivering remote inpatient care to patients in community hospitals in South Florida and beyond. Expanding the hospital's array of clinical education, wellness, and provider training programs. The MCH project has other potential applications to patients and families. For example, a hospitalized child could use a mobile robot to "attend" school remotely, keeping up with classes and staying in touch with friends.

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.)

Today, pediatric care poses a complex set of expensive challenges to the U.S. healthcare system, such as a high level of emergency room visits, providing appropriate care for young patients with chronic conditions like asthma, diabetes, obesity and epilepsy, and improving patient compliance with medication, diet or fitness regimens. The innovative MCH telehealth model can be applied to many other pediatric and adult medical conditions, such as sickle cell disease, leukemia, congenital cardiac conditions, and kidney disease to name a few. It can also provide a national model for improving access to medical care in a cost-effective manner. After all, many urgent care and emergency room visits could be avoided if patients or family members had the ability to consult with a physician 24/7 through their smart phones, tablets or laptops. In fact, the development of new mobile healthcare applications integrated with a patient's EMR provides an ideal opportunity to deliver specialized medical care in a cost-effective manner, while promoting disease prevention and wellness. By engaging children and adolescents with smart mobile apps, robots and other devices, the MCH project will also provide the medical advice, education, coaching and support necessary to lead healthier lives. In summary, the MCH telehealth project has great potential to address inefficiencies in the U.S. healthcare system, provide a higher level of care to the aging U.S. population, meet the expected greater demand for home care, and reduce inappropriate usage of emergency rooms.

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

Long known for innovation in healthcare technology, Miami Children's Hospital has made significant investments in its IT infrastructure in recent years, including the following successful projects: A "wireless everywhere" strategy that supports real-time clinical data entry, advance notifications, streaming high-definition video and broad support for other clinical services associated with telemetry, trauma and medical collaboration. A Virtual Desktop Infrastructure (VDI) that enables a single management interface for thousands of desktops and laptops, while maximizing performance and accessibility to clinical information. A Pediatric Electronic Data System (PEDS) that captures virtually all patient data, as well as registration and billing information in a productivity-enhancing comprehensive system. A multi-dimensional enterprise data warehouse (EDW) that incorporates clinical, financial and operational data to improve clinical outcomes with personalized solutions; track operational metrics; and correlate financial measures with clinical and operational measures. This component positions MCH to deliver "personalized medicine" for children focused on finding the best cure for the individual patient's disease or condition. Data mining and business intelligence tools that allow

MCH physicians to obtain actionable information to improve patient outcomes and help hospital executives make better operational and business decisions. Fit4Kids Care iPhone® App. This mobile app allows older children, parents and other family members to quickly locate MCH urgent care centers and to search the MCH physician directory. Patient interactive network. MCH was the first freestanding children's facility in Florida to offer the GetWellNetwork®, an innovative patient interactive system that provides educational tools, a guide to hospital resources and services, and numerous entertainment resources. Investing in these types of IT initiatives helps MCH improve patient care, boost operational efficiency and increase access to vital information from throughout the health system.