The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

Status:
Laureate

Year:
2013

Organization Name:
CURE International

Organization URL:
http://cure.org/hydrocephalus

Project Name:
Hydro DB

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

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.)

CURE operates a network or hospital that (among many things) treats children with a deadly brain condition known as hydrocephalus. Two years ago, we decided to expand our circle of hydrocephalus care and train surgeons throughout the developing world in the techniques necessary to cure hydrocephalus. Surgeons join a 12-week fellowship at our hospital in Uganda to learn and practice the techniques alongside our world-class experts. The training also involves equipping them with the tools necessary to practice care back in their home country, including a patient database system. The system is novel in that it runs like a local application in the Chrome browser but is attached to the cloud storage system. To address the challenges of developing world technology,

the system is intelligent enough to deal with variable Internet connectivity, storing the data locally using browser data storage tools and syncing data back to the cloud storage service whenever a given Chromebook is attached to an Internet connection. This data is used to both support the operational oversight of the worldwide network on surgeons treating the condition, as well as supporting research by our medical director at Boston Children's Hospital, MacArthur Fellow, Dr. Benjamin Warf. Long term, we hope to leverage this interconnected surgeon network to improve outcomes for patients presenting with this condition far beyond the effective and novel techniques we employ to treat the disease.

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.)

Our beta test occurred at Boston Children's Hospital in July 2012; the field training occurred in September of 2012, and it is now used by surgeons and care coordinators in countries like Uganda, Nigeria, Malawi, Bangladesh, Ethiopia, and Zambia. The project uses the Google Apps system for authentication and device tracking, Chromebooks as the primary input device, Sencha for the front-end user interface, the Chrome browser as the platform, and a customized version of Wordpress hosted at a data center in the UK for the backend reporting and update delivery.

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.)

The project is in use in the developing world today, but we plan to migrate our surgical hospital in Mbale, Uganda (cure.org/uganda) to this platform in Q1 CY2013.

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.)

Every week, our network of hydrocephalus doctors are treating dozens of children who would otherwise almost certainly die from this condition. The database allows the network to support these doctors better as they use their newly trained surgical skills to save the lives of infants throughout the developing world. You can read the story of a specific young boy named Tom who has benefited from CURE's hydrocephalus care at http://cure.org/story/04

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 project is innovative in the use of Google platforms to address the issues of variable Internet access in a developing world context. It is innovative in its use of Wordpress as a secure platform for storing and tracking surgical patient data. It is a best practice in its use of the javascript library Sencha in creating a "desktop feel" within the browser to help make the user interface for developing world participants more friendly and intuitive.

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

This project was developed in house at CURE International by John Kleinschmidt, the Director of Technology Development.