The Computerworld Honors Program

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Final Copy of Case Study

Status:
Laureate

Year:
2013

Organization Name:
Microsoft Research

Organization URL:
http://research.microsoft.com/en-us/collaboration/default.aspx

Project Name:
Adjusting Pneumonia Vaccination Periods to Save Lives

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

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.)

Nearly a million children die from pneumonia each year, making it a leading cause of death in children, and the single most important public health problem for children under the age of five. Most babies with access to preventive care receive three doses of the vaccine at 6, 10, and 14 weeks of age. The schedule is not ideal, as children are highly vulnerable until five years of age and the vaccination schedule is designed to provide protection for the earlier years. The Oxford Vaccine Group is conducting a program, Himalaya Help, to determine if altering the vaccination schedule can extend childhood immunity throughout those critical first five years. For the trial, the team is scheduling the first two doses to infants who are 6 and 14 weeks old. The third dose is then administered

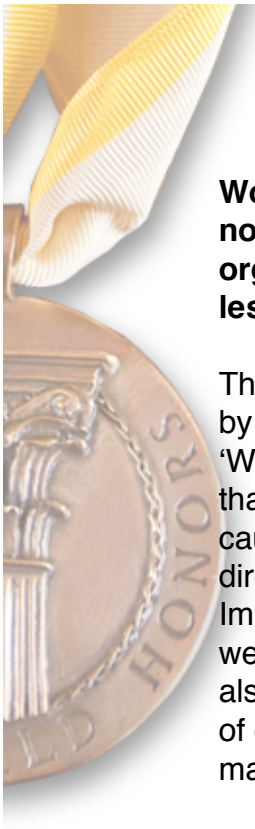
when the infants are eight months old. The team is hopeful that this delay in administering the final vaccination will protect children until a much later age, thus reducing mortality from this serious disease. One of the biggest problems in medical informatics is keeping track of data and all of the associated details. The University of Oxford and Microsoft Research developed CancerGrid to address these issues in support of clinical trials and clinical studies in cancer. It creates and deploys clinical trial support infrastructure in a fraction of the time and cost of conventional methods. In addition, they created new software called Vaccine Data Management (VDM), used to provide full document management support for the clinical cancer vaccine studies in both England and Nepal. The researchers in Nepal now transmit data back to the University of Oxford in real time through a secure Internet connection. The level of data input that is required has been reduced, allowing them to spend more time performing actual research.

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.)

Yes.

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.)

The University of Oxford Department of Computer Science team recognized that their colleagues in the Oxford Vaccine Group needed support for their clinical trial operations, and believed the CancerGrid technology could be of use. Jim Davies, professor of Software Engineering at the University of Oxford, said, "We're using Microsoft InfoPath, which was exactly what they needed so that the researchers, the domain experts, could use this on their own desktops to create the forms they needed to acquire data. These forms could then be fed into a SharePoint server and accessed from within rather than a broad collaboration." The InfoPath and SharePoint technologies enable the team to distribute and manage forms securely, a critical requirement for ensuring patient privacy during clinical trials. "What's exciting about working with Microsoft Research is that they have the expertise, not only in computer science, but also in life sciences," Davies said. "You have somebody who understands the requirements, the needs, the processes of scientists, but also understands the technologies: what can and can't be done, how you can best apply tools and technologies to solve real scientific problems."



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.)

This project should be considered a notable advancement that can be adopted by or tailored for other organization and uses. "The children's doctors there said, 'We don't know why the children are dying in the hospital. Come and help.' So that's why we started working there. What we found was that the most important cause of serious illness in the hospital was pneumonia," said Andrew Pollard, director of the Oxford Vaccine Group and professor of Pediatric Infection and Immunity, University of Oxford. "I believe that with this project, there are things we can do, which will make a difference to the lives of children there." VDM can also be applied to one of the biggest issues in medical information: keeping track of data and all its associated details in one location and providing full document management support.

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

For more information: Watch the video at: http://research.microsoft.com/apps/video/default.aspx?id=154165 Read the case study in PDF: http://research.microsoft.com/en-us/collaboration/stories/hw_pneumonia_cs.pdf About Microsoft Research Connections: http://research.microsoft.com/en-us/collaboration/default.aspx