Georgia Tech and CDC work to improve safety of blood supply

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The Georgia Tech College of Computing, working in partnership with the Centers for Disease Control and Prevention, has developed a Web-based tool for tracking blood safety. The tool is expected to help developing countries improve the adequacy and safety of their national blood supplies through better monitoring and evaluation.

The tool, which is accessed through a standard Web browser, tracks about 80 blood safety indicators continuously at the hospital and provincial levels. A pilot test in Zambia showed that the tool could improve the timeliness and accuracy of data collection efforts, allowing blood safety officials to better forecast or predict regional and seasonal blood usage patterns.

"A simple, scalable, Web-based tool like this can make a tremendous difference in public health around the world," said Santosh Vempala, distinguished professor in the College of Computing's School of Computer Science and faculty leader for the project. "The Zambian health officials immediately saw the benefits of real-time data collection and the ability to compare different regions' needs and see trends over time."

The project started when John Pitman, public health advisor in CDC's Global AIDS Program, met Vempala and explained the challenges involved in ensuring global blood safety. Their vision of a web-based tracking system was taken up in 2008 by students in the College of Computing's Computing for Good class, co-taught by Vempala. Using

information about current conditions and future demands within the target countries, the Georgia Tech team, computer science Ph.D. students Adebola Osuntogun and Stephen Thomas, built a Web-based system that resource-limited countries of any size could use to report data to national authorities. The system could also be used by a global organization, like CDC, to monitor multiple projects.

The Georgia Tech team developed the new Web-based tool from a Microsoft Excel version created by CDC. The team field-tested the Web-based tool in Zambia in July-August 2008 to obtain feedback from blood safety program staff.

"I was impressed by the team's ability to adapt to the computing environment in Zambia, and to make the changes necessary to ensure this would be an appropriate solution for developing countries," Pitman said. "Including staff from the Zambian national blood transfusion service in the development process was essential to be sure it fit their needs."

Ministries of health in Botswana, Cote d'Ivoire, Ethiopia, Guyana, Haiti, Kenya, Mozambique, Namibia, Nigeria, Rwanda, South Africa, Tanzania, Uganda and Zambia will begin using the new tracking system on January 1, 2009. All 14 countries are recipients of U.S. financial support through the President's Emergency Plan for AIDS Relief (PEPFAR).

Georgia Tech's Computing for Good class gives students the opportunity to understand how computing can be used to improve the human condition, according to Vempala. "Projects such as this collaboration with the CDC present computer science as a cutting-edge technological discipline that empowers our students to solve problems and make a positive impact on society."

Source: Georgia Institute of Technology

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