

Computerized reminders significantly improve HIV care in resource-limited setting

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A large randomized controlled study is among the first to rigorously demonstrate that health information technology can improve compliance with patient care guidelines by clinicians in resource-limited countries. The study was led by Regenstrief Institute investigator Martin Chieng Were, M.D., M.S., assistant professor of medicine at the Indiana University School of Medicine, and Regenstrief Institute affiliated scientist Rachel Vreeman, M.D., M.S, assistant professor of pediatrics at the IU School of Medicine.

The impact of this improved compliance is seen across multiple aspects of patient care, including laboratory testing and referrals. The study found that providing computer-generated reminders to clinicians resulted in a four-fold increase in completion of overdue clinical tasks for children seen in a pediatric HIV clinic in Eldoret, Kenya. The study appears in the March issue of *Pediatrics*, the journal of the American Academy of Pediatrics.

"If a child with HIV does not get the appropriate tests and therapies quickly, he or she can get very sick and may die," Dr. Were said. "In resource-limited settings, [health care providers](#) with limited training are trying to provide good care for a high numbers of patients. The computer-generated prompts help them provide high-quality care for so many patients. With the prompts, not only were they four times more likely to follow the HIV care guidelines, but they completed these important clinical tasks faster."

Examples of the overdue clinical tasks that were more likely to be completed when clinicians received computerized reminders were:

- Tests to diagnose HIV in infants.
- Chest X-ray to rule out tuberculosis.
- Recommended laboratory tests for patients, including tests for severity of HIV, and kidney and [liver function tests](#).
- Referral of [malnourished children](#) for dietary support.

The findings of this study have already propelled the use of computer-generated clinical reminders for the care of adults and children in over 50 additional clinics in western Kenya. All are Academic Model Providing Access to Healthcare sites. AMPATH—a partnership of Moi University, Moi Teaching and Referral Hospital, and a consortium of North American institutions led by the IU School of Medicine—was created in response to the challenge of providing life-saving HIV care. AMPATH has enrolled over 160,000 HIV-positive people, with almost 2,000 new patients being enrolled each month at over 60 urban and rural clinic sites throughout western Kenya. The majority of patients cared for by AMPATH are among the poorest in the world.

"Many countries in Africa and other developing settings are investing heavily in health information systems," Dr. Were said. "We need to provide evidence of the benefits, costs and impact of these systems to inform policy decisions. Aspects of these systems that work should be promoted, while those that lack rigorous evidence should be critically evaluated."

Dr. Were is a Harold Amos Medical Faculty Development Scholar of the Robert Wood Johnson Foundation. In addition to his Regenstrief and IU affiliations, Dr. Were is AMPATH's first chief medical information officer and co-chair of the mHealth Alliance Evidence Working Group.

The first World Health Organization Collaborating Center for Medical Informatics, the Regenstrief Institute is a leader in global health informatics and has created one of the first truly scalable electronic medical record systems in Sub-Saharan Africa. OpenMRS, based at the institute, is now used in multiple sites in more than 40 countries in Africa, Asia, Europe, South and North America. Much of the design for OpenMRS was gleaned from Regenstrief's four decades of experience with electronic medical record systems, including its first implementation as the AMPATH Medical Records System in Kenya.

"We need high-quality evidence that health IT innovations can improve health care in resource-limited settings," senior author Dr. Vreeman said. "This study provides that evidence, showing how we can improve the quality of care for a very vulnerable population of children." Dr. Vreeman serves as co-field director for research of the AMPATH Consortium.

More information: "Computer-generated reminders and quality of pediatric HIV care in a resource-limited setting," *Pediatrics*, 2013.

Provided by Indiana University

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