A Multimodal Intervention Can Help Developing Nations Reduce One of the Most Common Health Care-Acquired Infections

Release Date: March 15, 2018

Surgical site infections are the most frequent health care-associated infections in developing countries. According to the World Health Organization (WHO), this type of infection can affect up to one-third of surgical patients in those nations.

In an effort to combat and reduce these infections, researchers with the Johns Hopkins Armstrong Institute for Patient Safety and Quality collaborated with the WHO to determine whether a specific infection control and patient safety intervention would decrease the number of surgical site infections in African hospitals. The results were recently published in *The Lancet Infectious Diseases*. After more than 4,000 operations at four hospitals in Africa, the number of surgical site infections decreased from occurring in 8 percent of surgeries to 3.8 percent. The researchers also found the probability of a patient getting a surgical site infection dropped approximately 60 percent across all sites as a result of the intervention.

"We have been able to show in high-income settings that health care-associated infections, including surgical site infections, are preventable," says Sean Berenholtz, M.D., interim director of the Armstrong Institute for Patient Safety and Quality. "It is encouraging that the same intervention adapted for low to middle income countries could be just as effective."

As part of the intervention at the African hospitals , the team incorporated use of the Comprehensive Unit-based Safety Program, or CUSP, a five-step process that includes educating staff on the science of improving patient safety, identification of defects, implementing tools to improve teamwork, communication and more. "We needed to understand what the local defects were, and CUSP is an effective strategy to help frontline staff identify local opportunities to improve," Berenholtz says.

Researchers also helped the hospital teams develop technical prevention measures specific to the individual hospitals, including optimal antibiotic treatment, perioperative bathing of patients and appropriate hair removal.

Currently, the researchers are exploring opportunities to implement the intervention in other hospitals in Africa. Based on the group's findings, Berenholtz believes the intervention is widely applicable and that health care-associated infections, such as surgical site infections, are preventable in such settings.

"Surgical care is risky and is usually associated with complications that could lead to prolonged suffering, longer hospital stay, increased cost, and could even be fatal," Berenholtz says. "Hopefully this intervention will help prevent that."

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Funding for this research was provided by the U.S. Agency for Healthcare Research and Quality (HHSA2902010000271) and the WHO.