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Surgery can be safely performed in settings with limited resources

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The humanitarian organization Médecins Sans Frontičres performed close to 20,000 procedures in resource-limited settings between 2001 and 2008 with an operative death rate of only 0.2 percent, suggesting surgical care can be provided safely in these circumstances with appropriate minimum standards and protocols, according to a report in the August issue of *Archives of Surgery,* one of the JAMA/Archives journals.

Of the 230 million major surgical procedures performed worldwide each year, an estimated 4 percent or less are done in poor-income countries, according to background information in the article. "The fact that the latter bear the greatest burden of injury, violence and maternal mortality indicates a substantial unmet need for surgical care, although few data exist about the burden of unmet surgical disease in the developing world," the authors write.

In developed countries, surgical practices typically subscribe to quality control programs to monitor and improve safety that do not yet exist in resource-limited countries. Reportedly high rates of operative death in these nations have prompted a re-examination of the safety of international surgical care. Kathryn M. Chu, M.D., M.P.H., of Johns Hopkins Medical Institutions, Baltimore, and Médecins Sans Frontičres (MSF), Johannesburg, South Africa, conducted a retrospective study of 17 surgical programs from 13 countries performed by MSF, an international medical organization that provides surgical care in response to humanitarian crises.

Between 2001 and 2008, surgeons involved with MSF performed 19,643 procedures on 18,653 patients. Among these, 8,329 (42 percent) were emergency procedures, 7,933 (40 percent) were for obstetric-related problems and 2,767 (14 percent) were trauma-related. Eight of the 13 programs reported no deaths, the highest death rate was 0.9 percent and the overall death rate was 0.2 percent.

A higher rate of death was associated with programs in conflict settings, procedures performed under emergency conditions, complex procedures (including abdominal surgeries and hysterectomies) and those done in patients given a higher score under the American Society of Anesthesiologists classification of severity.

"As a large provider of surgical care in developing countries, assuring quality is paramount for MSF," the authors write. "Our low operative mortality, even in a variety of emergencies, was partly the result of strict protocols for all essential aspects of surgical care. In most humanitarian contexts outcome data are difficult to collect, which means that structural and process indicators are even more important, as are minimum standards for essential items such as water, a blood bank, electricity, sterilization equipment and a postanesthesia care unit."

A wide range of additional organizations, including governments, non-governmental organization and missionary groups, provide surgical care in similar settings, the authors note. "Quality improvement programs are needed to regulate the enormous body of surgical providers in resource-limited settings," they conclude. "In this respect, the World Health Organization's Safe Surgery Saves Lives checklist is an important first step in a process of establishing global minimum standards in surgical care for humanitarian contexts. Operational research is needed to ensure such standardized approaches developed in relatively well-resourced settings are adapted to the complexities and constraints of humanitarian emergencies."