

Invest in Lifebox, save lives

By Faye M. Evans, MD

Pediatric Anesthesiologist, Emory University School of Medicine

Member, ASA Global Humanitarian Outreach Committee

Imagine having to administer anesthesia to your patient without the use of a pulse oximeter. In more than 77,000 operating rooms across the developing world, your anesthesia colleagues do just that. They have no pulse oximetry. (1) These devices, ubiquitous in the developed world operating rooms, are just too expensive in the developing world. Access to widespread oximetry is the most significant barrier to its use, and millions of patients' lives are placed at unnecessary risk for the simple lack of a tool most of us take for granted.

There are about 234 million operations performed globally each year. (2) About 7 million people die or have major complications from surgery worldwide every year. Atul Gawande, a surgeon at the Brigham and Women's Hospital, Boston, MA, created the WHO Surgical Safety Checklist in 2008. The goals of the checklist are to enable medical teams to eliminate errors that can lead to increased morbidity and mortality. According to the results obtained in the 2007-2008 pilot study performed by the WHO and published in *The New England Journal of Medicine* in 2009, it is now believed that at least half a million deaths per year worldwide would be preventable with effective implementation of the checklist.(3) Since its initial release in 2008, the Safe Surgery Saves Lives Initiative now has more than 3900 hospitals representing 122 countries registered as Safe Surgery Saves Lives Participating Hospitals.

One of the strengths of the checklist is in its simplicity and applicability in almost all countries. Appropriate additions and modifications to fit local practice are encouraged. However, there is one item on the checklist that prevents its true application in the developing world. Item #4 on the surgical checklist is, "a pulse oximeter is on the patient and functioning." A study published in 2010 by Gawande and colleagues in the *Lancet* showed that across sub-Saharan Africa, between 60-70% of operating rooms have no pulse oximeter.(1) Today there are over 77,000 operating rooms worldwide that do not have pulse oximeters to monitor patients.

Hypoxia and hypoventilation are two significant dangers during all forms of anesthesia. The pulse oximeter is a simple, safe, rapid, noninvasive and reliable indicator of hypoxia. Large observational studies,(4) randomized controlled trials(5) and systematic reviews (6) have confirmed that monitoring by pulse oximetry effectively detects hypoxia and reduces the incidence of non-fatal adverse outcomes compared to clinical monitoring alone. There is universal agreement that pulse oximetry has led to an exponential leap in patient safety. In fact, if you had to choose only one monitor to have during an anesthetic, which would it be?

In order to help rectify the tremendous lack of pulse oximeters in the developing world, a collaborative effort, known as Lifebox, was undertaken by the World Federation of

Societies of Anesthesiology (WFSA), the Association of Anaesthetists of Great Britain and Ireland (AAGBI), the Harvard School of Public Health and the Brigham and Women's Hospital in Boston. The challenge taken on by this consortium is to save the lives of thousands of people undergoing surgery in under-resourced countries through the use of a pulse oximeter. Lifebox is a not-for-profit organization that grew out of the World Health Organization's Safe Surgery Saves Lives initiative. Lifebox has developed the world's foremost low-cost, high quality pulse oximeter that is compliant with international standards and is suitable for use in low-resource settings. It is robust, resistant to damage, has reusable probes and is suitable for all ages. A \$250 tax-deductible donation in support of this project will put a pulse oximeter into the hands of colleagues who need it most. This includes the purchase price of the oximeter as well as costs to get the device to the destination. A key part of the project is that each oximeter is supplied with educational materials including videos, tutorials, and a manual. Lifebox is working to make sure that no person dies during surgery simply because a pulse oximeter was not available and basic safety checks were not done.

For \$250, you can outfit an OR with a functional pulse oximeter. For \$250, you can help improve the safety of anesthesia for the world's poorest people. For \$250, you can help an anesthesia provider to take better care of their patients. For \$250, you can advance the cause of patient safety worldwide

To make a tax-deductible donation, please go to the Global Humanitarian Outreach Committee of the ASA website: www.asahq.org/GHO/Lifebox.aspx

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