

The Bare Minimum: The Reality of Global Anaesthesia and Patient Safety

Nicholas Boyd¹ · Adam Hewitt Smith²

Published online: 1 June 2016
© Société Internationale de Chirurgie 2016

We read with interest McQueen et al.'s article 'The Bare Minimum: The reality of Global Anaesthesia and Patient Safety' [1]. We would like to thank the authors for bringing attention to the significant shortfalls that still exist in the provision of safe anaesthesia in operating theatres across the world. We agree that unachievable international guidelines may result in little impact to patient care and, at worst, may 'engender a sense of defeatism' which is clearly counterproductive.

However, we write specifically about pulse oximetry and would argue that this should be a 'bare minimum' standard of care for any procedure that has potential for airway or breathing compromise. In particular, we are concerned that McQueen et al. do not advocate pulse oximetry for a rural hospital giving ketamine general anaesthesia. Although ketamine causes less respiratory depression and airway compromise in comparison to alternative anaesthetic agents, these effects remain a distinct possibility, particularly when used in conjunction with benzodiazepines [2]. In such circumstances, simple interventions such as airway opening manoeuvres or bag-valve mask ventilation can be lifesaving, even in the absence of oxygen.

Pulse oximetry provides a non-invasive, reusable patient monitor with no disposable parts and can run on

a small rechargeable battery for many hours at a time. It provides an early warning of hypoxia, allowing the anaesthetist to respond and prevent catastrophic consequences. We would argue that it is the most suitable patient monitor for anaesthesia in low resource settings. Indeed, the importance of the pulse oximeter is reflected by its inclusion on the WHO Surgical Safety Checklist and it remains the only monitor to be required by the checklist [3].

Pulse oximetry is now far more accessible and affordable than it once was. Organisations such as Lifebox have shown that pulse oximeters, with relevant training, can be distributed to all levels of health facility in low- and middle-income countries and evidence indicates that they are then used by anaesthetic providers, with knowledge and skills training being maintained at follow-up months later [4]. From our personal experience, Lifebox pulse oximeters are being used routinely, are highly valued by the anaesthetic providers and work well after many years of use, even in small rural hospitals providing ketamine general anaesthesia.

In summary, pulse oximetry should no longer be viewed as an unobtainable, unaffordable method of monitoring for anaesthesia. Regardless of the level of health facility or choice of anaesthetic agents, we strongly advocate that pulse oximetry should be a bare minimum standard of care and that this should be reflected in guidelines.

Compliance with ethical standards

Conflict of Interest Nicholas Boyd and Adam Hewitt Smith have taken part in voluntary work with Lifebox. Nicholas Boyd has been appointed as a research fellow for a project coordinated by Lifebox.

✉ Nicholas Boyd
drnickboyd@gmail.com

¹ Great Ormond Street Hospital For Children NHS Trust, London, UK

² Mbale Regional Referral Hospital, Mbale, Uganda

References

1. McQueen K, Coonan T, Ottaway A et al (2015) The bare minimum: the reality of global anaesthesia and patient safety. *World J Surg* 39(9):2153–2160. doi:[10.1007/s00268-015-3101-x](https://doi.org/10.1007/s00268-015-3101-x)
2. Craven R (2007) Ketamine. *Anaesthesia*. 62(Suppl 1):48–53
3. World Health Organisation (2008) WHO surgical safety checklist and implementation manual. http://www.who.int/patientsafety/safe_surgery/tools_resources/SSSL_Manual_finalJun08.pdf?ua=1
4. Finch LC, Kim RY, Ttendo S et al (2014) Evaluation of a large-scale donation of Lifebox pulse oximeters to non-physician anaesthetists in Uganda. *Anaesthesia* 69(5):445–451