
Impact of the COVID-19 Pandemic on Perioperative Providers and Resources in LMICs: A Report by Smile Train

Executive Summary

Perioperative providers in LMICs have continued to provide care despite lacking basic equipment, resources, and protocols to keep themselves safe from infection with SARS-CoV-2. A recent survey of over 500 healthcare workers in LMICs showed that nearly half of these providers do not have adequate PPE, and nearly a third of clinical facilities have shortages in anesthesia machine viral filters and pulse oximeters. Additionally, nearly a third of respondents in LMICs reported feeling unsafe from infection in their workplaces. Clinical facilities in LMICs continue to urgently need PPE, training, and surgical and equipment supplies to protect both patients and healthcare workers from SARS-CoV-2.

Introduction

The swift and worldwide spread of Coronavirus Disease 2019 (COVID-19) has led to devastating consequences for patients, health care workers, and healthcare systems.¹ In most low- and middle-income countries (LMICs), the existing surgical ecosystem was already compromised due to a shortage of healthcare workers, surgical capacity, and equipment. Most surgical procedures in LMICs are essential and cannot be safely postponed. The pre-pandemic unmet surgical need in LMICs has been estimated at over 4 billion people, further amplifying how dire the surgical burden is in these environments.² However, these already-strained human and equipment resources have been significantly redirected in LMICs to address the COVID-19 pandemic.³ Risk of infection in healthcare workers is increased due to sustained exposure to patients with COVID-19 and limited access to personal protective equipment (PPE).³ Perioperative providers have continued to provide care despite lacking basic equipment, resources, and protocols to keep themselves safe from infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

Overview of the Research

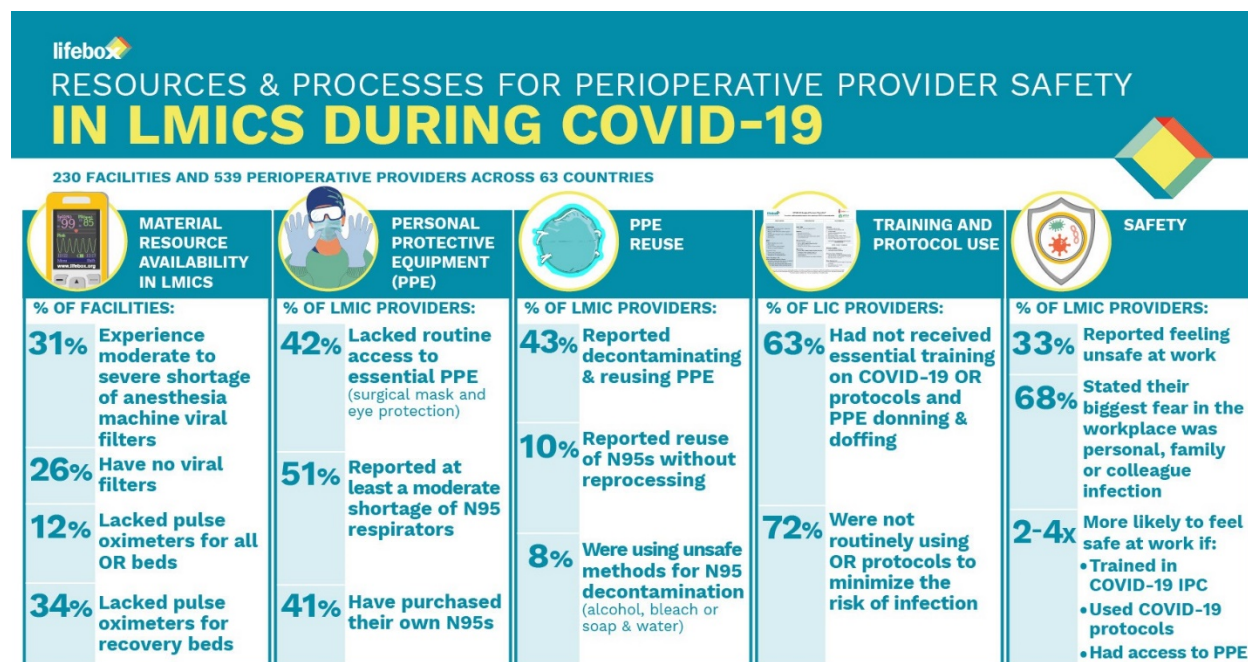
To better understand and quantify the impact of the COVID-19 pandemic on the safety of perioperative care providers in LMICs, Lifebox (in collaboration with Smile Train and Jhpiego) conducted a survey of 507 individual healthcare providers and 230 facilities in LMICs; these responses were compared with a sample of 32 responses from high-income country (HIC) providers. Overall, responses were received from 63 countries. Responses were collected in October of 2020.

Findings

The survey found a severe lack of essential PPE and infection prevention protocols that put perioperative providers at risk of infection with SARS-CoV-2. The survey found that in LMICs, 42% of surgical providers lack routine access to essential PPE. Furthermore, PPE is frequently being reused with or without decontamination between uses. Some providers reported using inappropriate methods such as soap & water, bleach, and alcohol to decontaminate PPE. More than half of the respondents reported a moderate to severe shortage of N95 respirators. Providers in LMICs also reported purchasing their own surgical masks (22%) and eye protection (37%).⁴

Postanesthetic care (PACU) areas reported shortages of pulse oximetry with only 66% having a pulse oximeter for each PACU bed.

Additionally, some facilities lacked protocols and training for providers on how to minimize risk of infection with SARS-CoV-2. 59% of providers in LMICs had received training in COVID-19 operating room protocols compared to 78% of HIC providers. Nearly twice as many providers reported feeling unsafe from infection while at work in LMICs compared to those in HICs.⁴



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Recommendations

Recommendations for how to best support healthcare workers and facilities in LMICs include the following:

➤ Strengthen supply chain for N95s, surgical masks, and viral filters	➤ Train providers on proper use and decontamination of consumable anesthesia items
➤ Assist LMIC facilities financially	➤ Directed donation of pulse oximeters
➤ Provide education and resources for N95 and mask decontamination	➤ Support training on specific protocols and checklists for caring for patients with COVID-19
➤ Support training regarding infection prevention control practices	➤ Increase funding and support for organizations that work in LMIC environments

Response from Smile Train

As a cleft lip and palate non-profit organization with more than 2100 partner medical professionals around the world, the safety of perioperative providers and surgical patients is a priority for Smile Train. Since March of 2020, Smile Train has invested over \$2,500,000 to support patients and providers as part of their COVID-19 response. These funds have been directed towards addressing multiple areas of need, including purchase of PPE, COVID testing equipment, surgical equipment, HEPA filters, and hospital sterilization costs. Furthermore, in the last year Smile Train

provided over 3,658 virtual and in-person education and training sessions to more than 26,500 medical professionals across 89 countries.

Additionally, since delaying or deferring urgent surgical procedures can lead to potentially harmful consequences to patients,⁵ Smile Train has continued to sponsor the safe repair of orofacial cleft. This is particularly important given that repair of cleft palate in babies should occur no later than 12 to 18 months of age and repair of cleft lip should not be delayed for more than 6 months.⁶ Overall, Smile Train sponsored over 119,000 cleft repair surgeries between March of 2020 and September of 2021.

Conclusions

The spread of SARS-CoV-2 has had devastating impacts on patients, healthcare workers, and surgical ecosystems. In LMICs, those impacts are even more consequential. Protecting healthcare workers by maintaining adequate PPE, clinical resources, and training is vital in the fight against the COVID-19 pandemic. The study reported herein shows that significant disparities remain within LMICs in the availability of critical PPE and other protective materials, a lack of essential surgical resources, and insufficient training protocols on how to mitigate the risk of SARS-CoV-2 infection between patients and healthcare workers. Clinical facilities in LMICs continue to urgently need PPE, training, and surgical supplies to protect both patients and healthcare workers.

Acknowledgements

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