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## **Optimal Resources for Children's Surgical Care: Executive Summary**

Global Initiative for Children's Surgery

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## **Executive Summary**

There is growing recognition that safe surgery and anesthesia should be an essential component of universal health care in low- and middle-income countries (LMICs). Landmark studies in 2015, by the Disease Control Priorities Project (DCP3) and Lancet Commission on Global Surgery (LCoGS) were important in defining the scale and scope of the surgical burden worldwide, priority surgical interventions, and economic impact of surgical care<sup>1,2</sup>. Shortly after the release of their two reports, the World Health Assembly passed resolution 68/15 designed to strengthen emergency and essential surgical and anesthesia care as a component of universal health coverage<sup>3</sup>. To facilitate implementation of the DCP3 and LCoGS recommendations a growing number of countries are developing national surgical, obstetric and anesthesia plans<sup>4</sup>. National surgical plans are an iterative process where stakeholders use country-level data to develop a contextually relevant and sustainable plan to ensure that surgical and obstetrical services are available for an entire country or region.

Of the 4.8 billion without access to surgical care, 1.7 billion are children and adolescents<sup>5</sup>. The vast majority of these children and adolescents live in LMICs, where the pediatric age group represents a disproportionately larger fraction of the population. In these settings, need for children's surgical care is high and poor care results in significant morbidity and mortality<sup>6</sup>. A child born in sub-Saharan Africa has an estimated 85% risk of requiring surgical care by age 15 years<sup>7</sup>. Improving surgical for children in LMICs can achieve several important goals, including early identification of correctable congenital anomalies and other surgical conditions, treatment of life-threatening injuries and burns, minimizing acute and long-term suffering, protecting families from substantial economic losses, and increasing economic productivity. For many childhood diseases including congenital anomalies, cancer, injuries and other emergencies, surgery remains the only curative modality in low resource regions of the world. Surgical care for children also has a role in achieving health-related Sustainable Development Goals and targets, in particular 1) Ending preventable deaths in newborns and

children under five, 2) Reduction in death and disability for road traffic injuries and non-communicable diseases, 3) Ensuring universal health coverage, and 4) Scaling up the health workforce <sup>8</sup>.

The Global Initiative for Children's Surgery (GICS) is a consortium of providers, institutions, and allies from both resource-rich and poor settings, who envision a future where every child will have access to surgical care <sup>9</sup>. GICS includes representation from 13 pediatric specialties: anesthesia, orthopedic surgery, neurosurgery, plastic surgery, urology, cardiac surgery, critical care, general pediatric surgery, otolaryngology, radiology, ophthalmology, oral and maxillofacial surgery and nursing. The goals of GICS are to: 1) promote the inclusion of children's surgical care within existing surgical and global child health initiatives; 2) provide strategic direction among the many children's surgery sub-specialties; and 3) identify high-priority needs and solutions from the perspective of local providers.

At the inaugural GICS meeting in London, England (May 2016) providers from LMICs expressed the need for guidelines that could be adapted for use in their local environment, especially for the purpose of advocating for increased resources. The Optimal Resources for Surgical Care (OReCS) project thus evolved to provide guidelines for essential surgical care for children in LMICs. A document was drafted and refined at the second and third GICS meetings (October 2016 and January 2018) with ongoing specialty expert input through multiple working groups. The OReCS document is divided into two parts: Part I: Guidelines for Different Levels of Care, and Part II: Supplies, Equipment and Infrastructure. Both are included as Supplementary Material. The OReCS document outlines the resources required to care for children with surgical conditions at all levels of the health care system (Table 1). The resources needed for different levels of children's surgical care are outlined in the form of templates, which are designed to support basic, intermediate and complex/advanced surgical care for children in low resource settings. The goal of these templates is to provide a guide for minimum standards for those planning surgical services for children in low-resource settings. Thus, the OReCS

document provides pragmatic, yet comprehensive recommendations regarding the resources, training and research priorities required for safe and high-quality surgical services for children in LMICs.

In conclusion, GICS convened a meeting of key stakeholders, led by LIMIC surgical and anesthesia providers, to develop guidelines for emergency and essential surgical services for children. The resulting product was the OReCS document which describes the resources needed to care for children with surgical problems at all levels of the health care system in LMICs. The document provides a strategy for integrating children's surgical care into national surgery, obstetric and anesthesia plans, or for developing surgical services within a child health policy/plan. The OReCS document can also serve as an important starting point for gap analysis, quality improvement, hospital assessment, training curricula, and for advocacy for children's surgical care. The OReCS program provides an important opportunity to mobilize the diverse community of international stakeholders to both implement and integrate children's surgery into existing and future global health initiatives.

### **Electronic supplementary material**

Optimal Resources for Children's Surgical Care: I. Guidelines for Different Levels of Care

Optimal Resources for Children's Surgical Care: II. Supplies Equipment and Infrastructure

### **Author contributions**

Writing, editing and formatting of the manuscript were performed by DG, EA, DO, KO and SB. Editing of the manuscript, critical mentorship and guidance, as well as development of the GICS organization was accomplished by EA, TB, SB, MB, MC, ZG, PK, BK, RK, VM, KO, DO, DP, JS, LSG, SS, BY, KL and DF. Creation of the content, themes, projects and conclusions of the manuscript was undertaken by the membership of the Global Initiative for Children's Surgery in its entirety.

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## **Compliance with ethical standards**

## **Conflict of interest**

All authors have no conflicts of interest to declare.

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### **Key Messages**

- Surgical care has an incontrovertible, crosscutting role in achieving child health.
- Children develop different surgical diseases compared to adults, present unique anesthetic challenges, and have special perioperative needs.
- The Optimal Resources for Children's Surgery document provides a strategy for integrating surgical care for children into National Surgical, Obstetric and Anesthesia Plans.
- There is an important opportunity to prevent death and reduce disability in children by scaling up surgical care in low- and middle-income countries.