



**MICHIGAN MEDICINE**  
UNIVERSITY OF MICHIGAN

# Educational Needs in Simulation Identified by Surgical Program Directors in Low-Middle Income Countries

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## Introduction

### Background:

- The workforce shortage plays a key role in the global burden of surgical disease disproportionately affecting low-middle income countries (LMIC)<sup>1</sup>.
- The **educational pipeline**, which includes surgical residency training programs, is vital to the **surgical workforce**.
- The success of surgical residency training has direct ramifications on the preparedness and adequacy of the surgical workforce.
- Surgical simulation has been suggested as a potentially beneficial educational modality in this setting<sup>2,3</sup>.
- The **specific educational needs** of surgical residency training programs with respect to simulation in LMIC have not been well-defined.

## Methods

### Research Question:

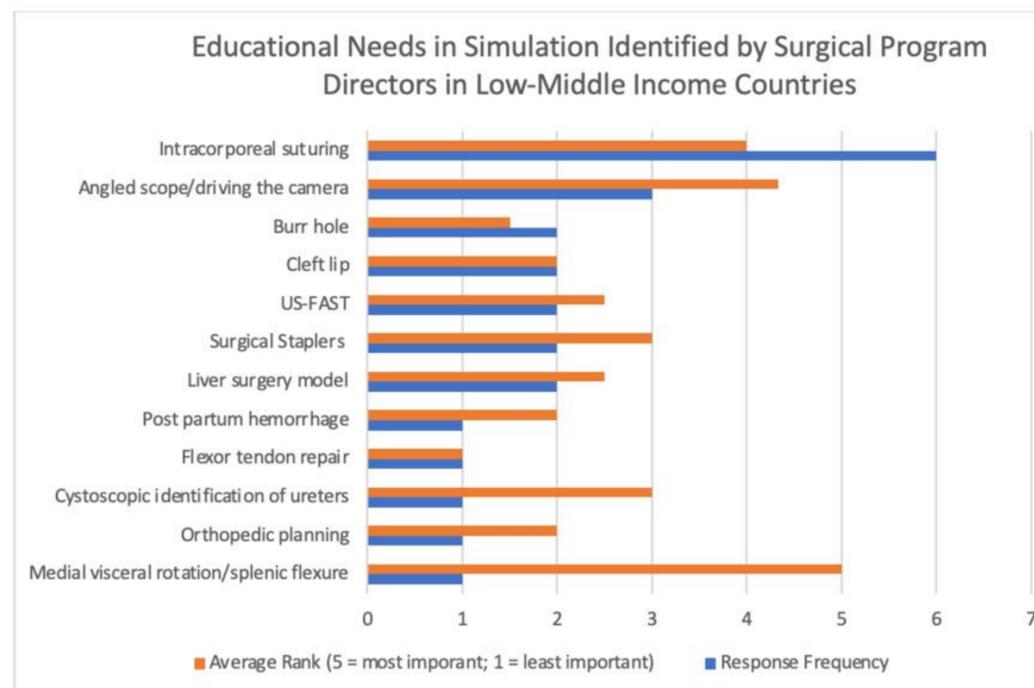
How do surgical program directors in LMIC think that **surgical simulation** could be most useful to their residents?

### Methods:

- A survey of program directors (PD) and associate program directors (APD) in 11 general surgery training programs across eight LMICs in Africa (**Ethiopia, Kenya, Cameroon, Niger, Tanzania, Gabon, Malawi, and Egypt**) was conducted.
- In a modified Delphi methodology (2 rounds), PDs and APDs were asked to identify psychomotor skills they felt would most benefit from surgical simulation.
- Initially submitted responses were consolidated, categorized by specialty, and redistributed to PDs to be ranked by priority.

## Results

- Response from **8/11** programs.
- Round 1 - 19 unique responses
- Round 2 - Highest priorities attributed to **laparoscopic skills**, specifically: 1) Use of angled laparoscope, 2) Advanced skills including intracorporeal suturing.
- 6/8 program directors ranked **intracorporeal suturing** as a top simulation priority.



## Conclusion

- A potential area of focus for curriculum development in surgical residency training programs in LMIC is the **simulation of laparoscopy** (including advanced laparoscopic skills).
- Surgical educators in these LMIC surgery training programs had high interest in advanced laparoscopic training, **contrary** to the expected traditional educational focus on **open skills** and procedures.

### References:

- <sup>1</sup>Meara, John G et al. "Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development." Lancet (London, England)
- <sup>2</sup>Campain, Nicholas J et al. "An Evaluation of the Role of Simulation Training for Teaching Surgical Skills in Sub-Saharan Africa." World journal of surgery
- <sup>3</sup>Tansley, Gavin et al. "Efficacy of Surgical Simulation Training in a Low-Income Country." World journal of surgery