



Global Surgical and Trauma Care

PPHS 511: Fundamentals of Global Health

October 29th, 2019

Presented by Etienne St-Louis MDCM

“Global surgery is an area of study, research, practice, and advocacy that seeks to improve health outcomes and achieve health equity for all people who require surgical care, with a special emphasis on underserved populations and populations in crisis. It uses collaborative, cross-sectoral, and transnational approaches and is a synthesis of population-based strategies with individual surgical care.”

Dare AJ, et al. Lancet. 2014.



Overview

1. **Surgery or the neglected stepchild of global health**
2. **Models of care: good, bad and unsustainable**
3. **A framework for progress**
4. **Observe, report and intervene**
5. **Take home points**

1. The Neglected Stepchild of Global Health

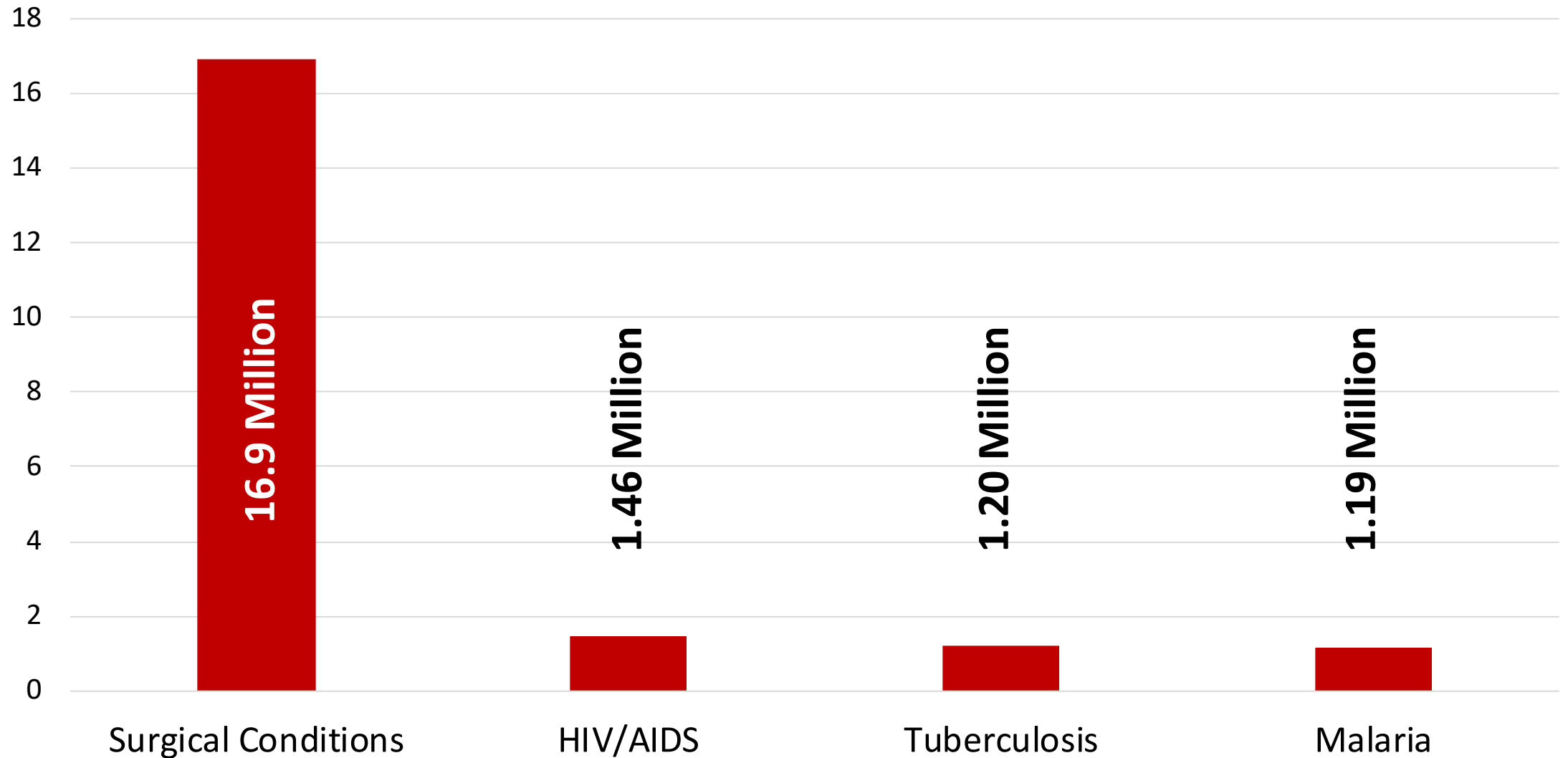


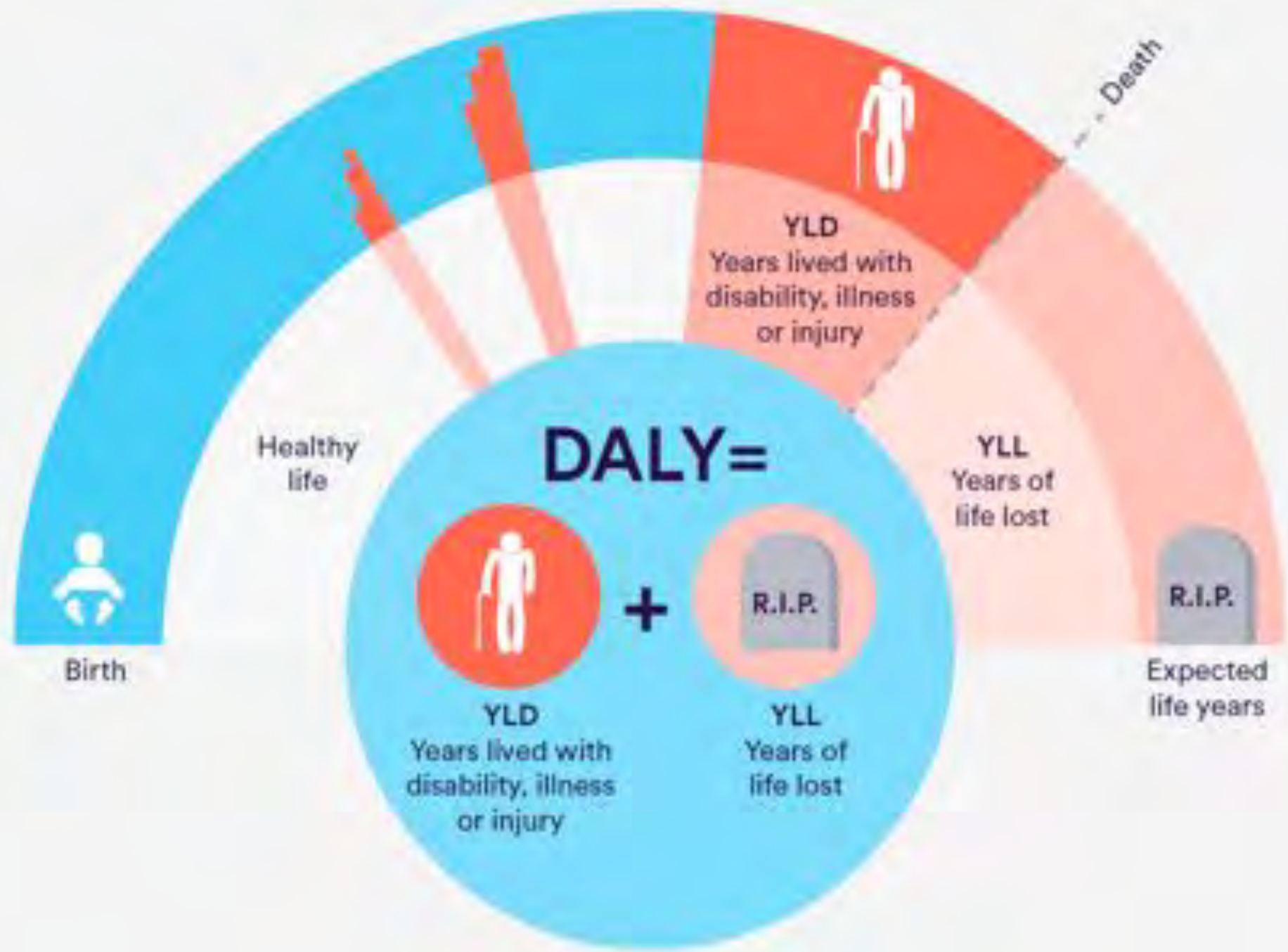
33% OF WORLDWIDE DEATHS



16.9 MILLION LIVES LOST

2010 Worldwide Deaths (Millions) by Cause

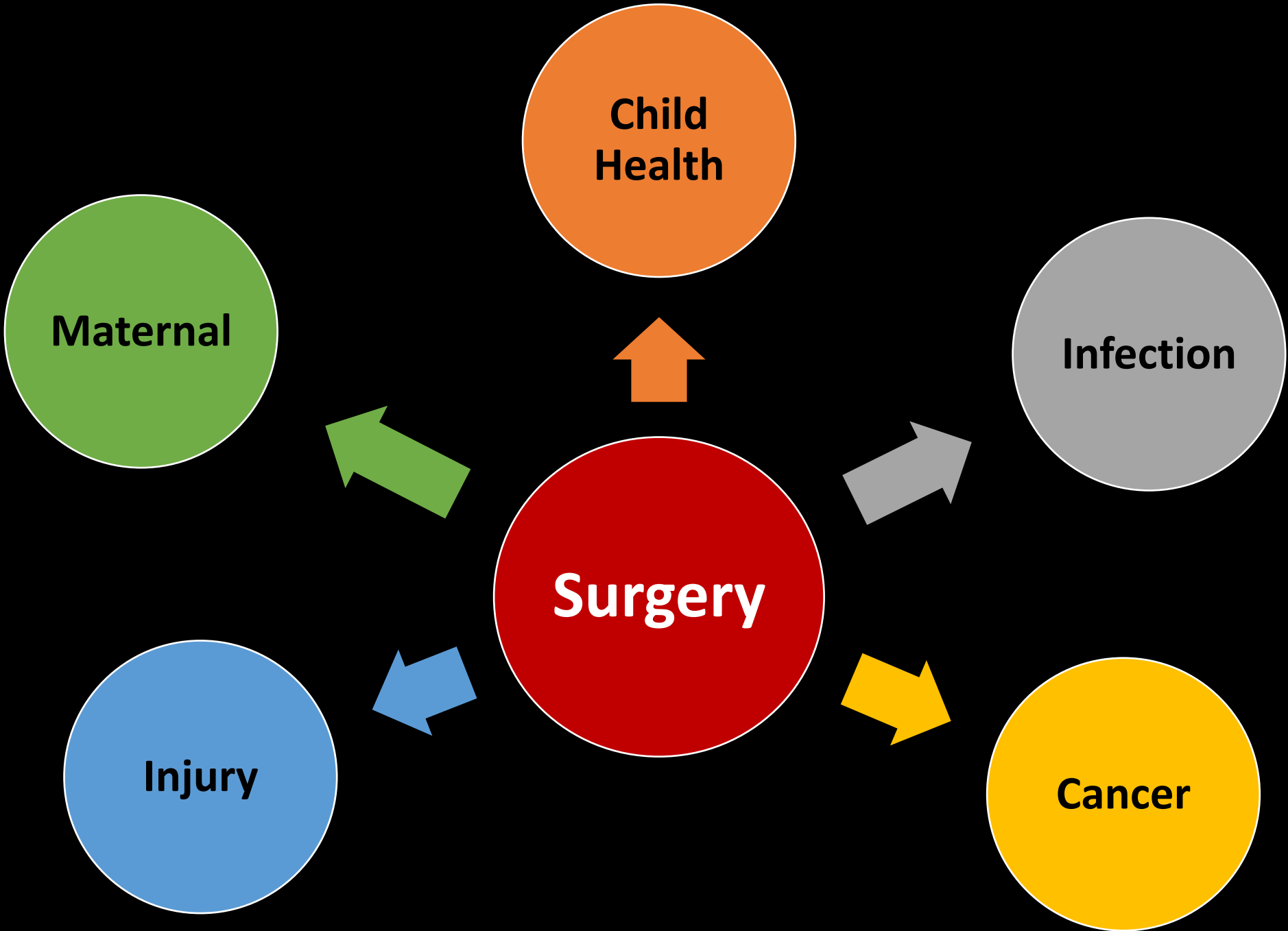




**77,200,000 DALYs
PER YEAR**









2. Models of Care: Good, Bad and Unsustainable





**Capacity
Draining**



**Capacity
Building**



3. A Framework for Progress



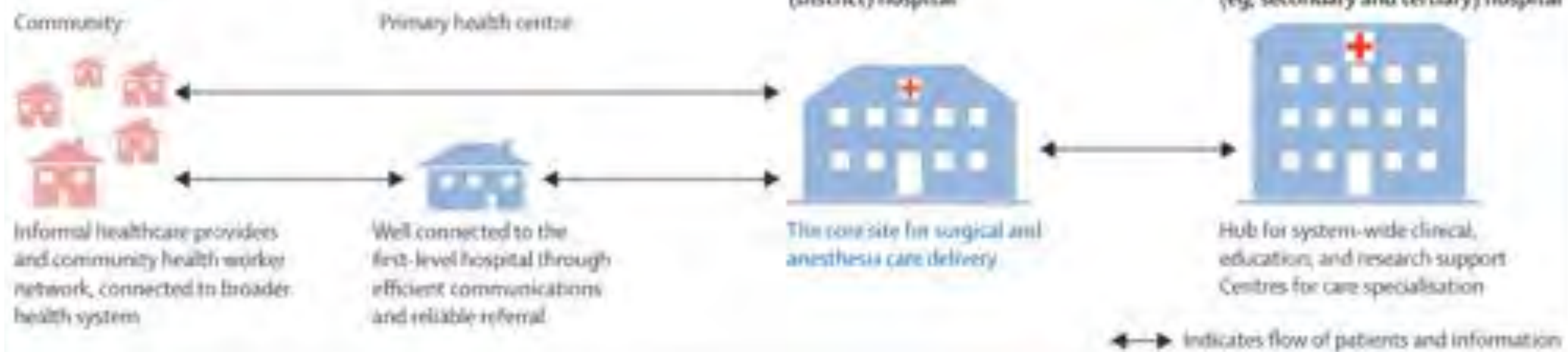




WAITING ROOM



Referral system



Caesarean



64%

Laparotomy



58%

Open Fracture



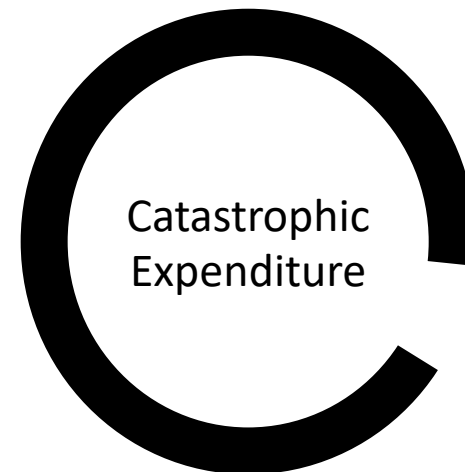
40%

	Definition	Target
Access to timely essential surgery	Proportion of the population that can access, within 2 h, a facility that can do caesarean delivery, laparotomy, and treatment of open fracture (the Bellwether Procedures)	A minimum of 80% coverage of essential surgical and anaesthesia services per country by 2030
Specialist surgical workforce density	Number of specialist surgical, anaesthetic, and obstetric physicians who are working, per 100 000 population	100% of countries with at least 20 surgical, anaesthetic, and obstetric physicians per 100 000 population by 2030
Surgical volume	Procedures done in an operating theatre, per 100 000 population per year	80% of countries by 2020 and 100% of countries by 2030 tracking surgical volume; a minimum of 5000 procedures per 100 000 population by 2030
Perioperative mortality	All-cause death rate before discharge in patients who have undergone a procedure in an operating theatre, divided by the total number of procedures, presented as a percentage	80% of countries by 2020 and 100% of countries by 2030 tracking perioperative mortality; in 2020, assess global data and set national targets for 2030
Protection against impoverishing expenditure	Proportion of households protected against impoverishment from direct out-of-pocket payments for surgical and anaesthesia care	100% protection against impoverishment from out-of-pocket payments for surgical and anaesthesia care by 2030
Protection against catastrophic expenditure	Proportion of households protected against catastrophic expenditure from direct out-of-pocket payments for surgical and anaesthesia care	100% protection against catastrophic expenditure from out-of-pocket payments for surgical and anaesthesia care by 2030

These indicators provide the most information when used and interpreted together: no single indicator provides an adequate representation of surgical and anaesthesia care when analysed independently.

Table 1: Core indicators for monitoring of universal access to safe, affordable surgical and anaesthesia care when needed

Dashboard using 6 core indicators





4. Observe, Report and Intervene





Global PaedSurg



NIHR Global Health Research Unit on
Global Surgery



GlobalSurg 1: Outcome of emergency abdominal surgery in high, middle and low income countries

Countries: 58 | Hospitals: 357 | Collaborators: 1532 | Patients: 10745

24 h mortality higher in LMICs



1.1%

1.00



1.9%

2.36

(1.40, 3.98)

Adjusted odds ratio (95% CI)



3.1%

2.60

(1.37, 4.93)

30 d mortality higher in LMICs



4.5%

1.00



6.0%

2.78

(1.84, 4.20)

Adjusted odds ratio (95% CI)



8.7%

2.97

(1.84, 4.81)

Checklist use associated with lower 30 d mortality



91.4%

Association of checklist with 30d mortality

0.62 (0.42, 0.92)

Adjusted odds ratio (95% CI)



55.9%

(Proportion of patients in whom checklist used)



32.1%



Wound infection after gastrointestinal surgery worldwide

Countries: 66 Hospitals: 343 Collaborators: 1815 Patients: 12 539

Population

Countries grouped by human development index



7339 patients

59%

193 hospitals
30 countries



3918 patients

31%

82 hospitals
18 countries



1282 patients

10%

68 hospitals
18 countries

Wound infection more common in low-income countries



9%



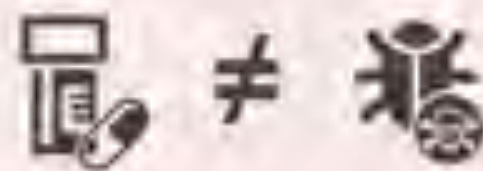
14%



23%

of patients

Drug-resistant bugs may be more common in low-income countries



17%

of patients with an infection and a result



20%



36%



GlobalSurg Collaborative. *Lancet Infectious Diseases*. Feb 2018.
Explore the data with our interactive visualisation: ssi.globalsurg.org
globalsurg.org [@GlobalSurg](https://twitter.com/GlobalSurg)

THE LANCET
Infectious Diseases

FALCON

an RCT by the



NIHR Global Health Research Unit on
Global Surgery

Pragmatic Multi-Centre Factorial Randomized Trial testing measures to reduce surgical site infection in low and middle income countries

CRANE

a trial by the



NIHR Global Health Research Unit on
Global Surgery

Feasibility of a cluster-randomized trial of a nutritional intervention to improve the outcomes after cancer surgery in low-income countries

EAGLE



European Society of
COLOPROCTOLOGY

ESCP Safe Anastomosis Programme in Colorectal Surgery: International cluster-randomized sequence study of a quality improvement intervention to reduce anastomotic leaks following right hemicolectomy



5. Take Home Points

- Addressing the inequity in surgical care is fundamental to achieving global health goals.
- Models addressing global surgical need should aim to build capacity, not deplete resources.
- Institutions providing surgical care need to be accessible and have the capacity to perform basic life-saving procedures in a safe and affordable manner.
- Research in global surgery must go beyond the descriptive.
- Innovative collaborations are paving the way for international crowdsourcing of clinical data in global surgery research, and interventional studies are coming down the pipeline.

Thank you!

Questions?

Etienne St-Louis

etienne.st-louis@mail.mcgill.ca

[@estlouismd](#)