

Safe Surgery: An Emerging Global Movement

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PROGRAM IN GLOBAL SURGERY
AND SOCIAL CHANGE

Harvard Medical School

2015: A Global Surgery Paradigm Shift

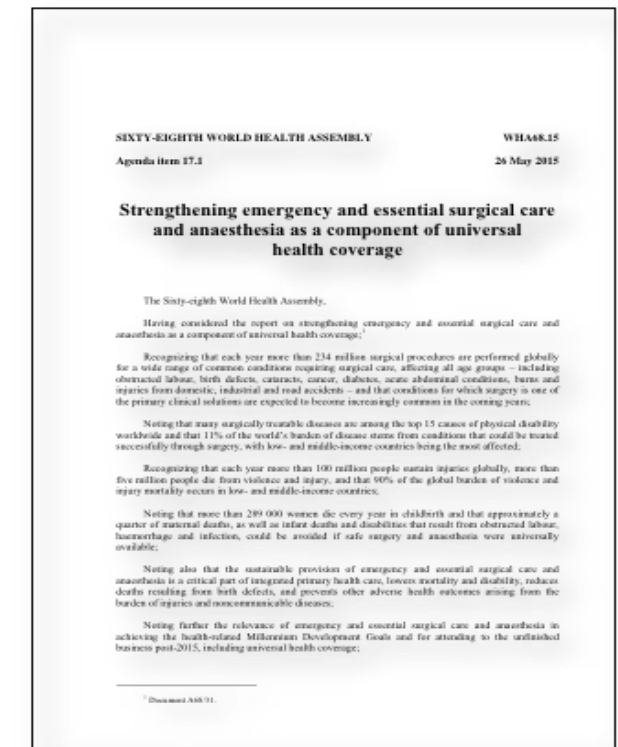
THE LANCET COMMISSION ON GLOBAL SURGERY



ESSENTIAL SURGERY INCLUDED IN DISEASE CONTROL PRIORITIES (DCP-3)



-WHA RESOLUTION 68.15 - EMERGENCY AND ESSENTIAL SURGICAL CARE AND ANAESTHESIA ADOPTED AS PART OF UNIVERSAL HEALTH COVERAGE

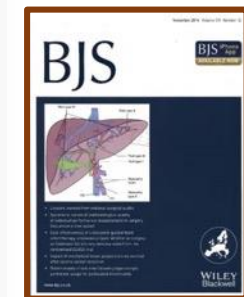


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LANCET COMMISSION ON GLOBAL SURGERY

- The Lancet Commission on Global Surgery
 - 110 collaborating countries
 - 5 Key messages
 - 100 publications and abstracts
- Baseline information
- Recommendations for implementing change



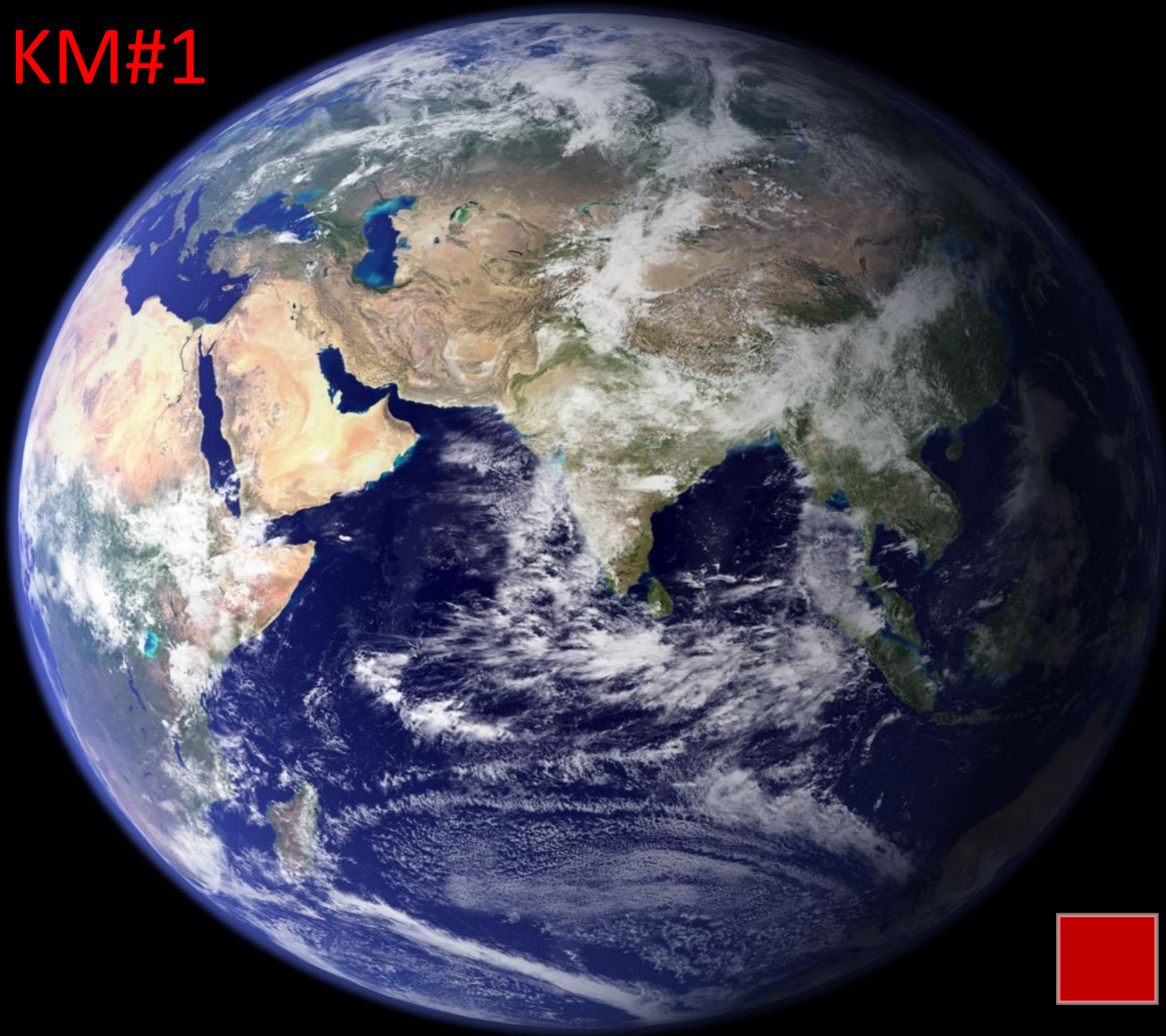
THE LANCET COMMISSION FINDINGS



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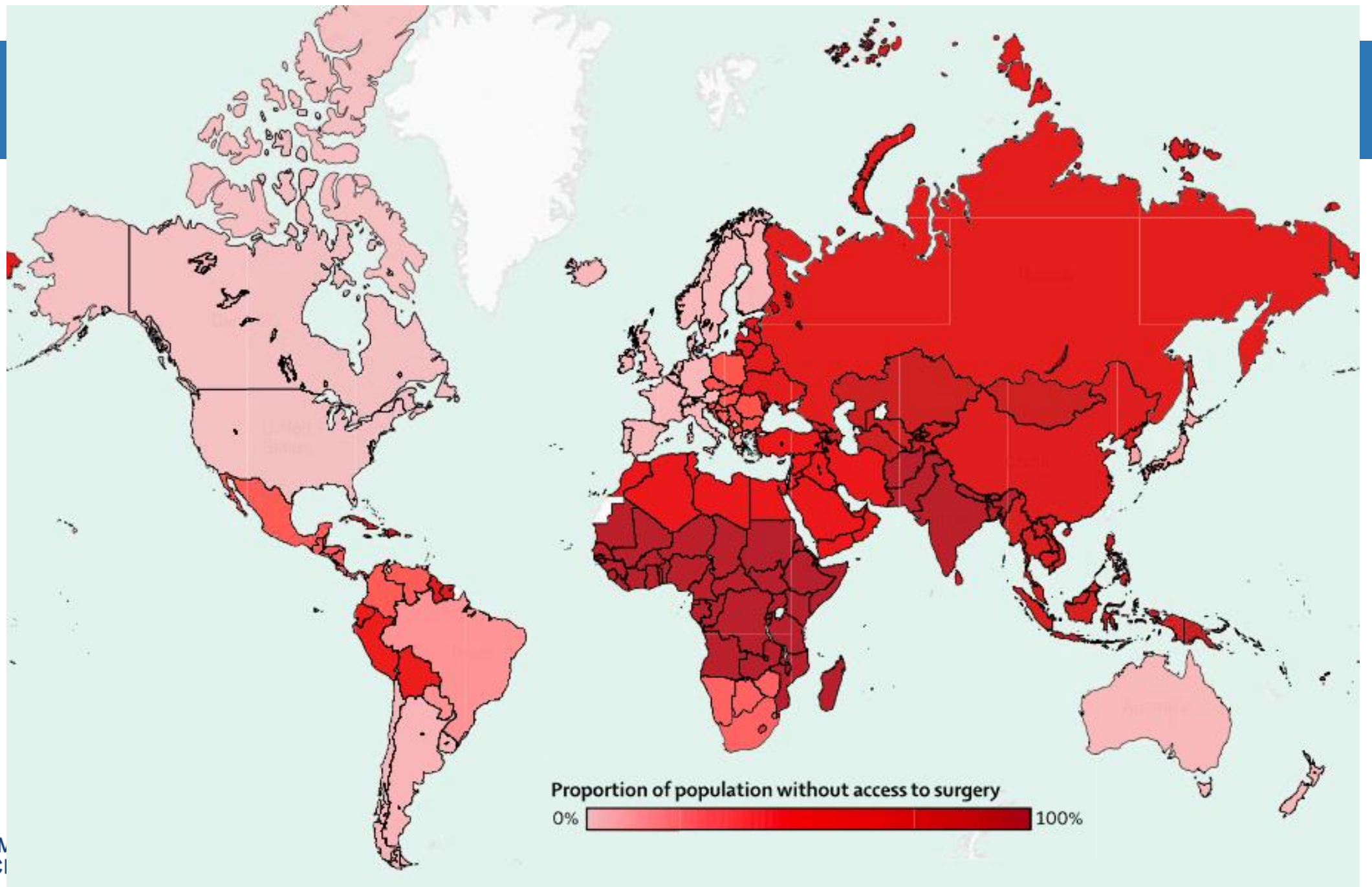
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KM#1



5 Billion
cannot access
safe surgery
when needed





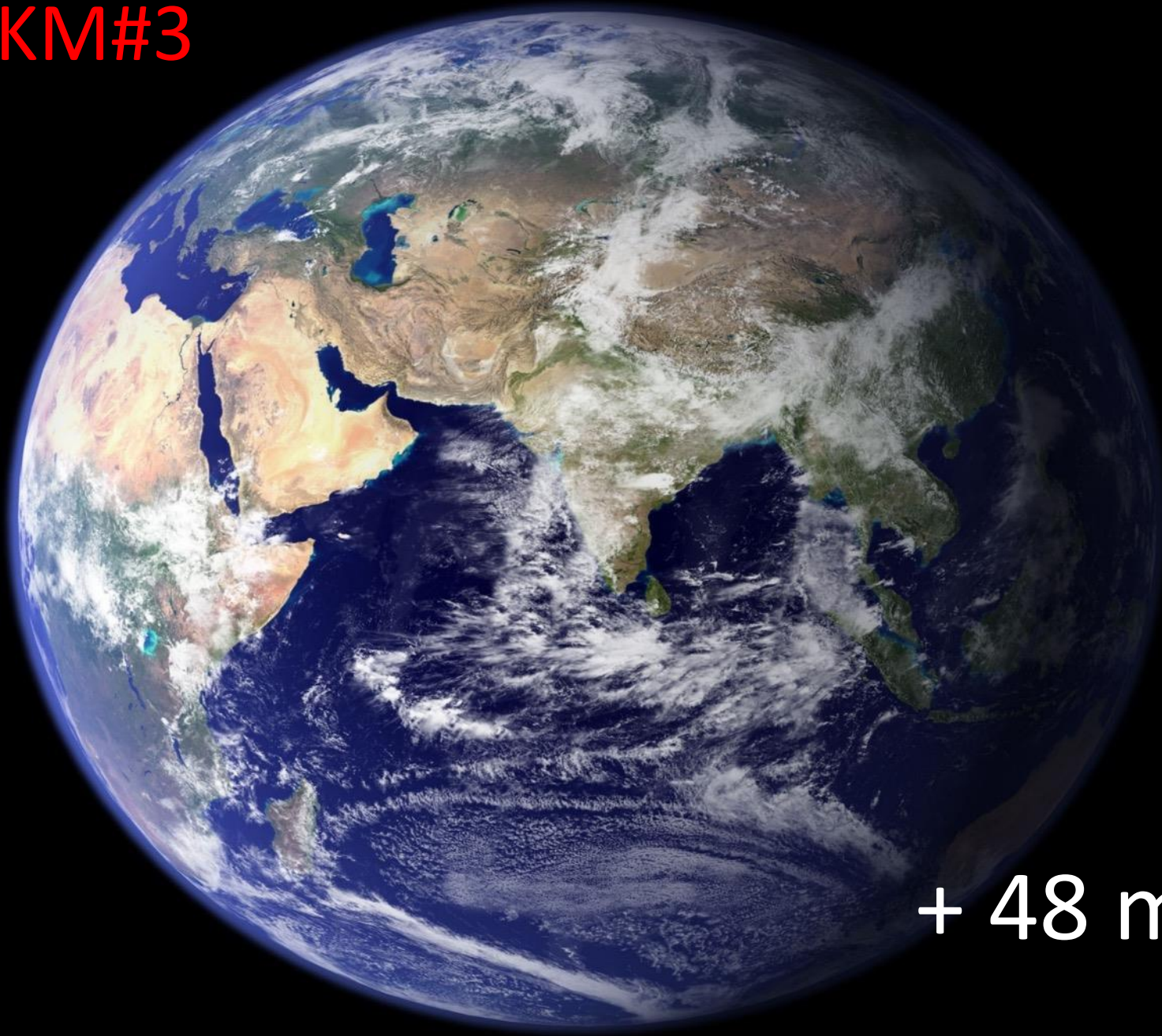
KM#2



143 million
more procedures
needed annually
at minimum

Poorest **1/3rd** of the world's population
receives **6.3%** of worldwide procedures

KM#3



33 million

Individuals face
catastrophic
expenditures
paying for surgery &
anesthesia annually

+ 48 million = **81 million**

Why do patients face catastrophic expenditure?

- More than 3 billion people live on less than \$2.50 per day
- Much basic surgical care is emergent and therefore cannot be financially planned for
- More robust risk pooling is required to avoid catastrophic financial consequences of surgical care or prevention from seeking care at all.



Time-critical and life- or limb-threatening



Unpredictable, cannot plan or save for financial consequences



User fees are often high and can be catastrophic



KM#4

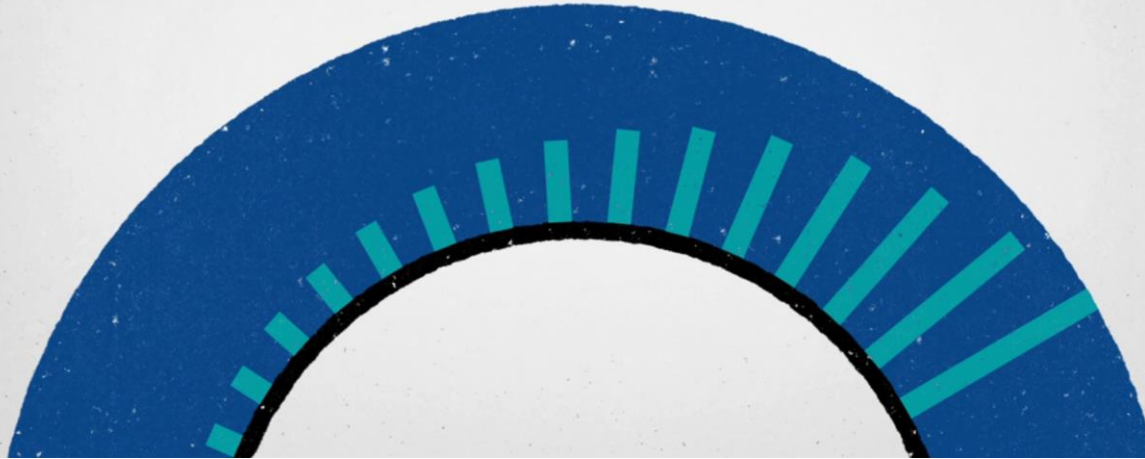


Investing in
surgery
is affordable,
saves lives,
& promotes
economic growth



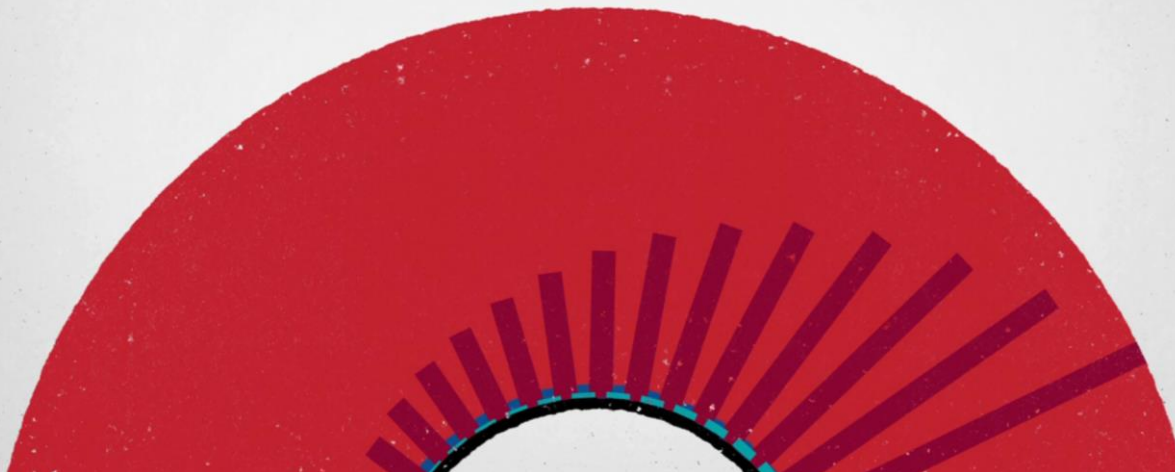
Cost of Surgical Expansion (2015-2030)

\$350,000,000,000

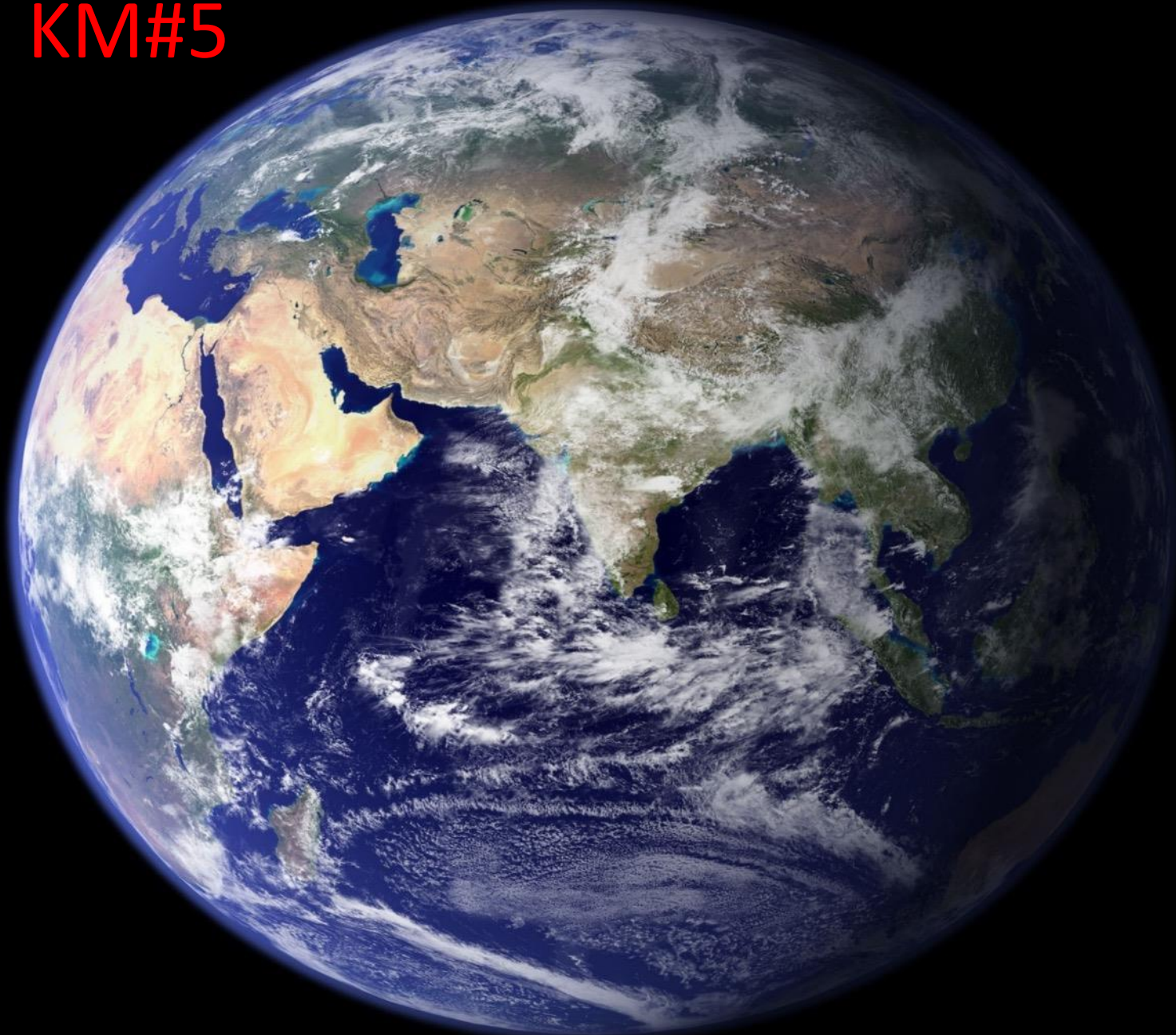


Total GDP Losses (2015-2030)

\$12,300,000,000,000



KM#5



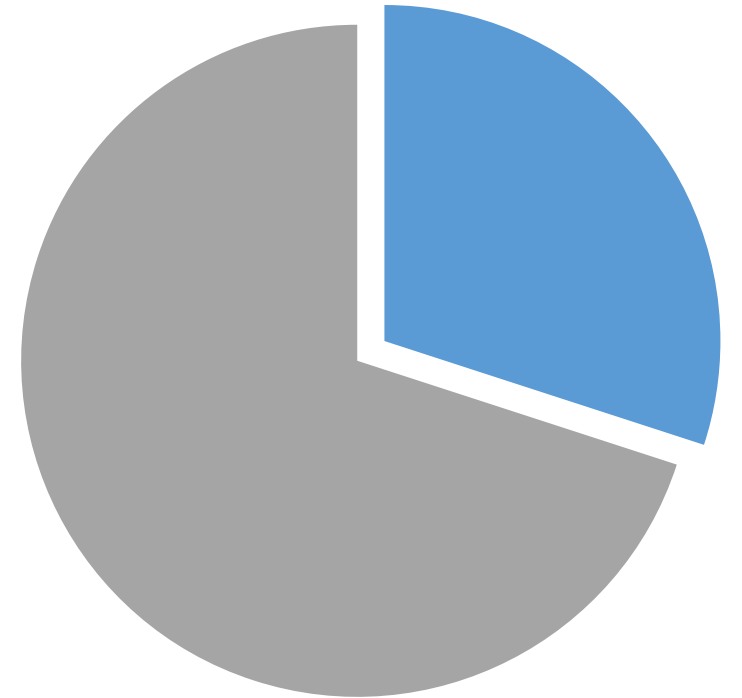
Surgery
is an indivisible,
indispensable
part of health
care



Surgery is an indispensable part of health care

28-32%
of the global
burden of disease is
from surgical conditions

More than malaria, TB, and HIV combined



6 GLOBAL INDICATORS TO MEASURE THE STRENGTH OF A SURGICAL SYSTEM

2H ACCESS
to Timely
Essential Surgery

**SURGICAL
VOLUME**
Procedures Done
in an Operating
Room per
100,000

**IMPOVERISHING
EXPENDITURE**
Protection
Against it

SAO/100,000
Specialist
Surgical
Workforce
Density

POMR
All Cause Death
Prior to
Discharge

**CATASTROPHIC
EXPENDITURE**
Protection
Against it.



TARGETS FOR EACH INDICATOR BY 2030

2H ACCESS TO
EMERGENCY
ESSENTIAL
SURGICAL CARE
80%

SURGICAL
VOLUME
5,000/100,000

IMPOVERISHING
EXPENDITURE
**100%
PROTECTED**

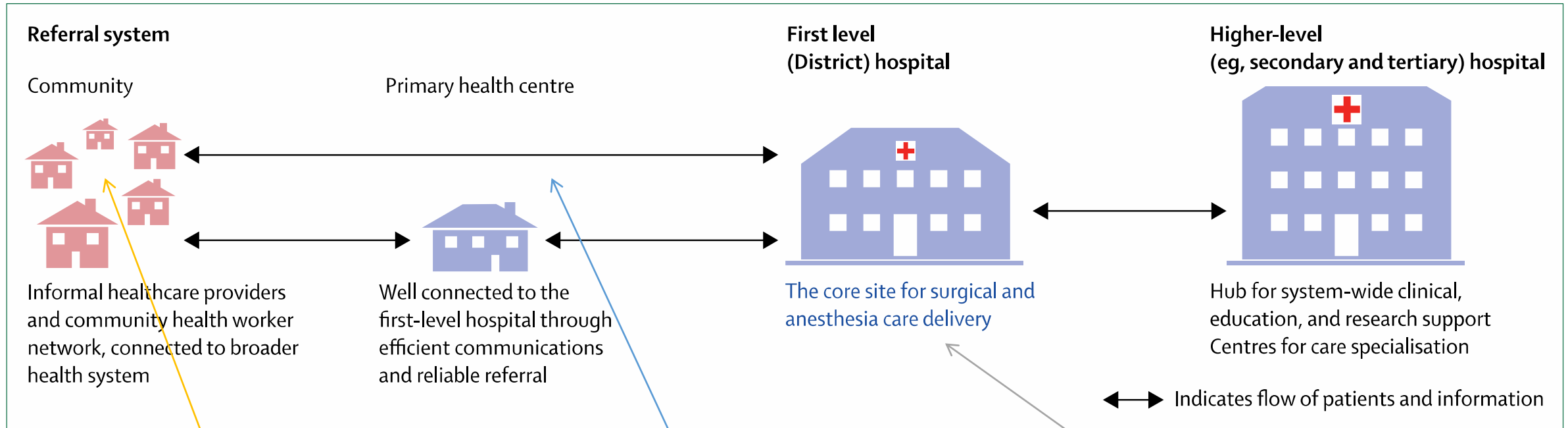
SURGEON+
ANAESTHESIA+
OBSTETRIC
PROVIDER
DENSITY
20/100,000

POMR
**RECORDED
WITH BASIC
RISK
ADJUSTMENT**

CATASTROPHIC
EXPENDITURE
**100%
PROTECTED**



THE THREE DELAYS IN ACCESSING CARE



The 1st Delay

Delay in Seeking Care

The 2nd Delay

Delay in Reaching Care

The 3rd Delay

Delay in Receiving Care



Health status

Mortality by age and sex

- Life expectancy at birth
- Adult mortality rate between 15 and 60 years of age
- Under-five mortality rate
- Infant mortality rate
- Neonatal mortality rate
- Stillbirth rate

Mortality by cause

- Maternal mortality ratio
- TB mortality rate
- AIDS-related mortality rate
- Malaria mortality rate
- Mortality between 30 and 70 years of age from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases
- Suicide rate
- Mortality rate from road traffic injuries

Fertility

- Adolescent fertility rate
- Total fertility rate

Morbidity

- New cases of vaccine-preventable diseases
- New cases of IHR-notifiable diseases and other notifiable diseases
- HIV incidence rate
- HIV prevalence rate
- Hepatitis B surface antigen prevalence
- Sexually transmitted infections (STIs) incidence rate
- TB incidence rate
- TB notification rate
- TB prevalence rate
- Malaria parasite prevalence among children aged 6–59 months
- Malaria incidence rate
- Cancer incidence, by type of cancer

Risk factors

Nutrition

- Exclusive breastfeeding rate 0–5 months of age
- Early initiation of breastfeeding
- Incidence of low birth weight among newborns
- Children under 5 years who are stunted
- Children under 5 years who are wasted
- Anaemia prevalence in children
- Anaemia prevalence in women of reproductive age

Infections

- Condom use at last sex with high-risk partner

Environmental risk factors

- Population using safely managed drinking-water
- Population using safely managed sanitation
- Population using modern fuels for cooking
- Air pollution level in cities

Noncommunicable diseases

- Total alcohol per capita (age 15+ years)
- Tobacco use among persons aged 18+ years
- Children aged under 5 years who are overweight
- Overweight and obesity in adults (Also: adult)
- Raised blood pressure among adults
- Raised blood glucose/diabetes among adults
- Salt intake
- Insufficient physical activity in adults (Also: adolescents)

Injuries

- Intimate partner violence prevalence

Perioperative
mortality rate

POMR
SURGICAL
VOLUME

Headcount ratio
of catastrophic
health
expenditure
CATASTROPHIC
EXPENDITURE

Headcount ratio
of impoverishing
health
expenditure
IMPOVERISHING
EXPENDITURE

Health systems

Quality and safety of care

- Perioperative mortality rate
- Obstetric and gynaecological admissions owing to abortion
- Institutional maternal mortality ratio
- Maternal death reviews
- ART retention rate
- TB treatment success rate
- Service-specific availability and readiness

Access

- Service utilization
- Health service access
- Hospital bed density
- Availability of essential medicines and commodities

Health workforce

- Health worker density and distribution
- Output training institutions

Health information

- Birth registration coverage
- Death registration coverage
- Completeness of reporting by facilities

Health financing

- Total current expenditure on health (% of gross domestic product)
- Current expenditure on health by general government and compulsory schemes (% of current expenditure on health)
- Out-of-pocket payment for health (% of current expenditure on health)
- Externally sourced funding (% of current expenditure on health)
- Total capital expenditure on health (% current + capital expenditure on health)

- Headcount ratio of catastrophic health expenditure
- Headcount ratio of impoverishing health expenditure

Health security

- International Health Regulations (IHR) core capacity index

Health
Service
Access
2HR
ACCESS

Health
Worker
Density and
Distribution
SAO DENSITY

DCP-3 Essential Surgery



EDITORS

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DCP-3 key findings

44 essential surgery procedures

Cost-effective, especially first level hospitals

Task sharing increases access

Disparities in safety of surgery in LMICs

Universal coverage of essential surgery should be financed early in the path to UHC



44 ESSENTIAL SURGERY PROCEDURES

	Platform for delivery of procedure		
	Community facility and primary health centres	First-level hospitals	Referral and specialised hospitals
Dental procedures	Extraction Drainage of dental abscess Treatment for caries*
Obstetric, gynaecological, and family planning	Normal delivery†	Caesarean birth† Vacuum extraction or forceps delivery† Ectopic pregnancy† Manual vacuum aspiration and dilation and curettage† Tubal ligation Vasectomy Hysterectomy for uterine rupture or intractable post-partum haemorrhage† Visual inspection with acetic acid and cryotherapy for precancerous cervical lesions	Repair obstetric fistula
General surgical	Drainage of superficial abscess† Male circumcision	Repair of perforations (perforated peptic ulcer, typhoid ileal perforation, etc)† Appendectomy† Bowel obstruction† Colostomy† Gallbladder disease (including emergency surgery for acute cholecystitis)† Hernia (including incarceration)† Hydrocelectomy Relief of urinary obstruction; catheterisation or suprapubic cystostomy (tube into bladder through skin)†	..
Injury‡	Resuscitation with basic life support measures† Suturing laceration† Management of non-displaced fractures†	Resuscitation with advanced life support measures, including surgical airway† Tube thoracostomy (chest drain)† Trauma laparotomy†§ Fracture reduction† Irrigation and debridement of open fractures† Placement of external fixator; use of traction† Escharotomy or fasciotomy (cutting of constricting tissue to relieve pressure from swelling)† Trauma-related amputations† Skin grafting Burr hole†	..
Congenital	Cleft lip and palate repair Club foot repair Shunt for hydrocephalus Repair of anorectal malformations and Hirschsprung's disease
Visual impairment	Cataract extraction and insertion of intraocular lens Eyelid surgery for trachoma
Non-trauma orthopaedic	..	Drainage of septic arthritis† Debridement of osteomyelitis†	..



COST EFFECTIVENESS

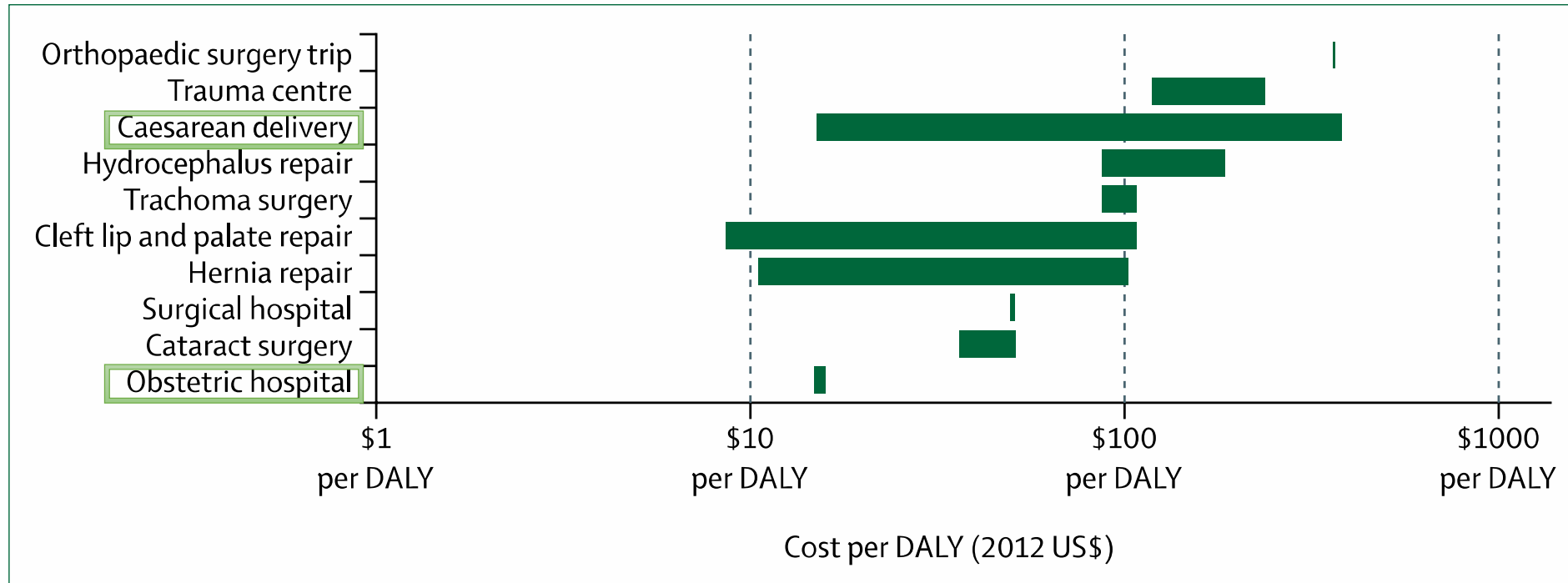


Figure 2: Cost-effectiveness of surgical interventions

Figure summarises the cost-effectiveness of surgical interventions in low-income and middle-income countries according to available evidence. The data are presented in cost per DALY averted, in 2012 USD\$.¹⁸ Orthopaedic surgery trip refers to a mission or outside group visiting a location and undertaking a set of surgical procedures. DALY=disability-adjusted life-year.



Strengthening emergency and essential surgical care and anaesthesia as a component of universal health coverage



**World Health
Organization**



PROGRESS REPORT WHA 2017

4 page report on countries achievements

NSOAPs

Data
collection

Completed in
Ethiopia and
Zambia

Undergoing in
Rwanda and
Tanzania

Processes in
another 12
countries

6 Indicators



GOING FORWARD...

**GLOBAL
INDICATOR
INITIATIVE**

**NATIONAL
SURGICAL
PLANNING**

**BUILD
CLINICAL
CAPACITY**

**INTERNATIONAL
ADVOCACY**

**SINGLE
COUNTRY
STUDIES**

**BUILD
RESEARCH
CAPACITY**

**CROSS
SECTORAL
DIVIDES**



COLLECTION OF STANDARDISED INDICATORS ALLOWS IDENTIFICATION OF AREAS FOR IMPROVEMENT AND TRACKING CHANGE AND BASELINING OF THE STATE OF SURGERY INTERNATIONALLY

GLOBAL INDICATOR INITIATIVE

- **World Bank**
- **Collection of 6 surgical indicators**
- **Culture of data collection**



SINGLE COUNTRY STUDIES ALLOW ANALYSIS OF REGIONAL VARIATION, BUILD LOCAL COLLABORATIONS AND COMPARE OFFICIAL AND ON THE GROUND ESTIMATES OF SURGICAL CAPACITY

SINGLE COUNTRY STUDIES

- **Supply Side Studies**
- **Demand Side Studies**
- **Subnational Variation**
- **Local Context**



NATIONAL SURGICAL PLANNING ALLOWS COUNTRIES TO SYSTEMATICALLY IDENTIFY CHALLENGES AND SOLUTIONS IN THE SURGICAL SYSTEMS

NATIONAL SURGICAL PLANNING

- **Local Champions**
- **Diverse Partners**
- **Strategic Solutions**



**BUILD RESEARCH
CAPACITY**

- Promote student involvement
- Exchange partnerships
- Ensure recognition and sustainability through global surgery programs



BUILDING CLINICAL SKILLS AND MENTORING NETWORKS IMPROVES THE CAPACITY AND QUALITY OF SURGICAL SUPPLY

BUILD CLINICAL CAPACITY

- **National Missions**
- **Telementoring**
- **Leveraging worldwide expertise**



COLLABORATION BETWEEN SECTORS LEADS TO COMPREHENSIVE, INNOVATIVE SOLUTIONS

CROSS SECTORAL DIVIDES

- **Collaboration with public health professionals**
- **Public-Private mentoring**
- **Leveraging worldwide expertise**



REGIONAL COLLABORATIONS CAN STRENGTHEN THE SURGICAL COMMUNITY, ALLOW COMPARISON AND SHARING OF APPROPRIATE BEST PRACTICE

INTERNATIONAL ADVOCACY

- **Regional Benchmarking**
- **Regional Advocacy**
- **International Advocacy**

