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Development Economics • Data

The Global Surgery Indicators and World Bank's World Development Indicators (WDI)

World Bank
Development Data Group (DECDG)

Emi Suzuki, M.A., Ph.D.

Outline of the presentation

- What is World Bank's World Development Indicators (WDI)
- What are the global surgery indicators
- Progress made
- Promoting global surgery data
- Data quality
- Challenges/opportunities

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What is WB’s World Development Indicators (WDI)

What is World Bank's World Development Indicators (WDI)

World Bank's main work:

1. Development Projects (funded over 12,000 projects since 1947)
2. Knowledge and Innovation (e.g. WDI, Open Data, Open Knowledge Repository)
3. Products and Services (offer support to developing countries through policy advice, research, and technical assistance)

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What is World Bank's World Development Indicators (WDI)

World Development Indicators (WDI) is one of the main knowledge products of the World Bank.

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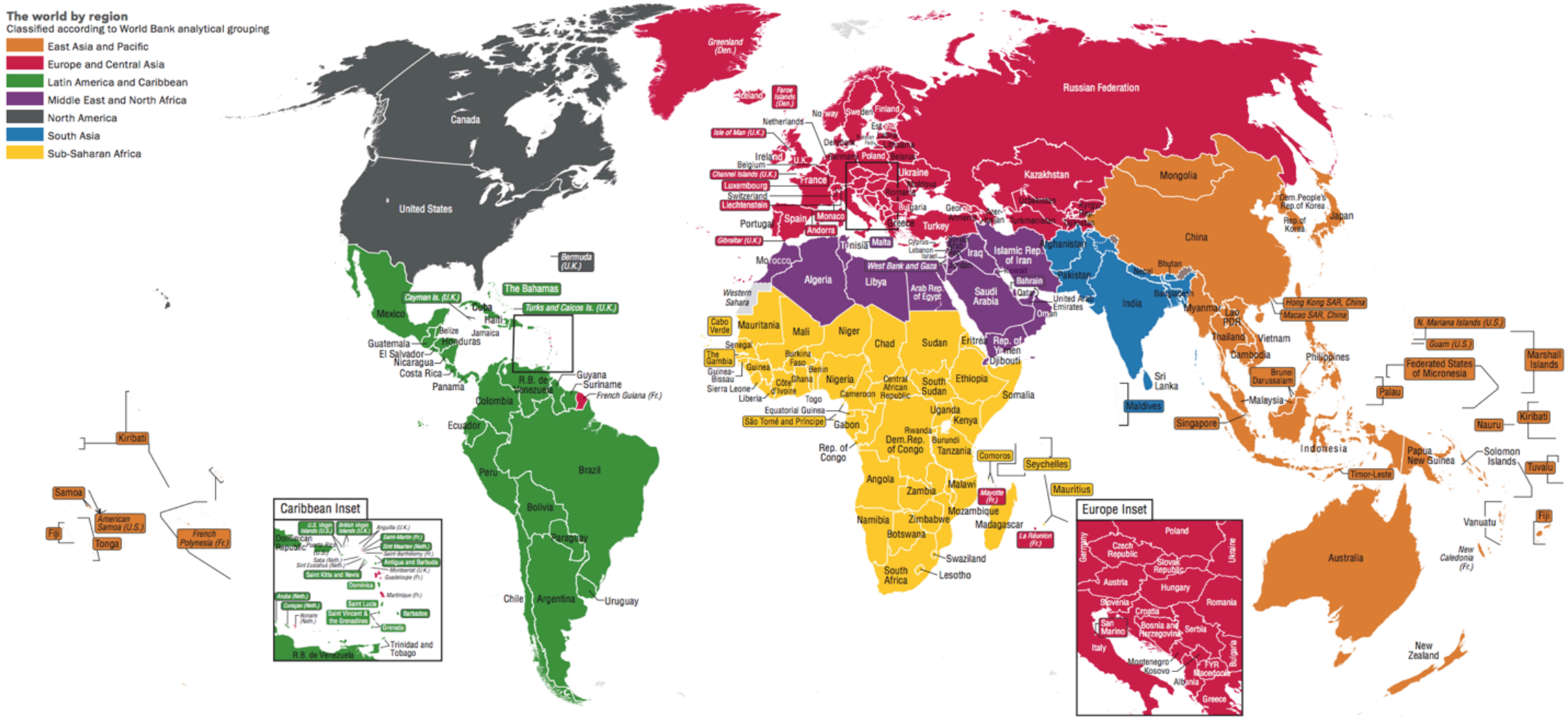
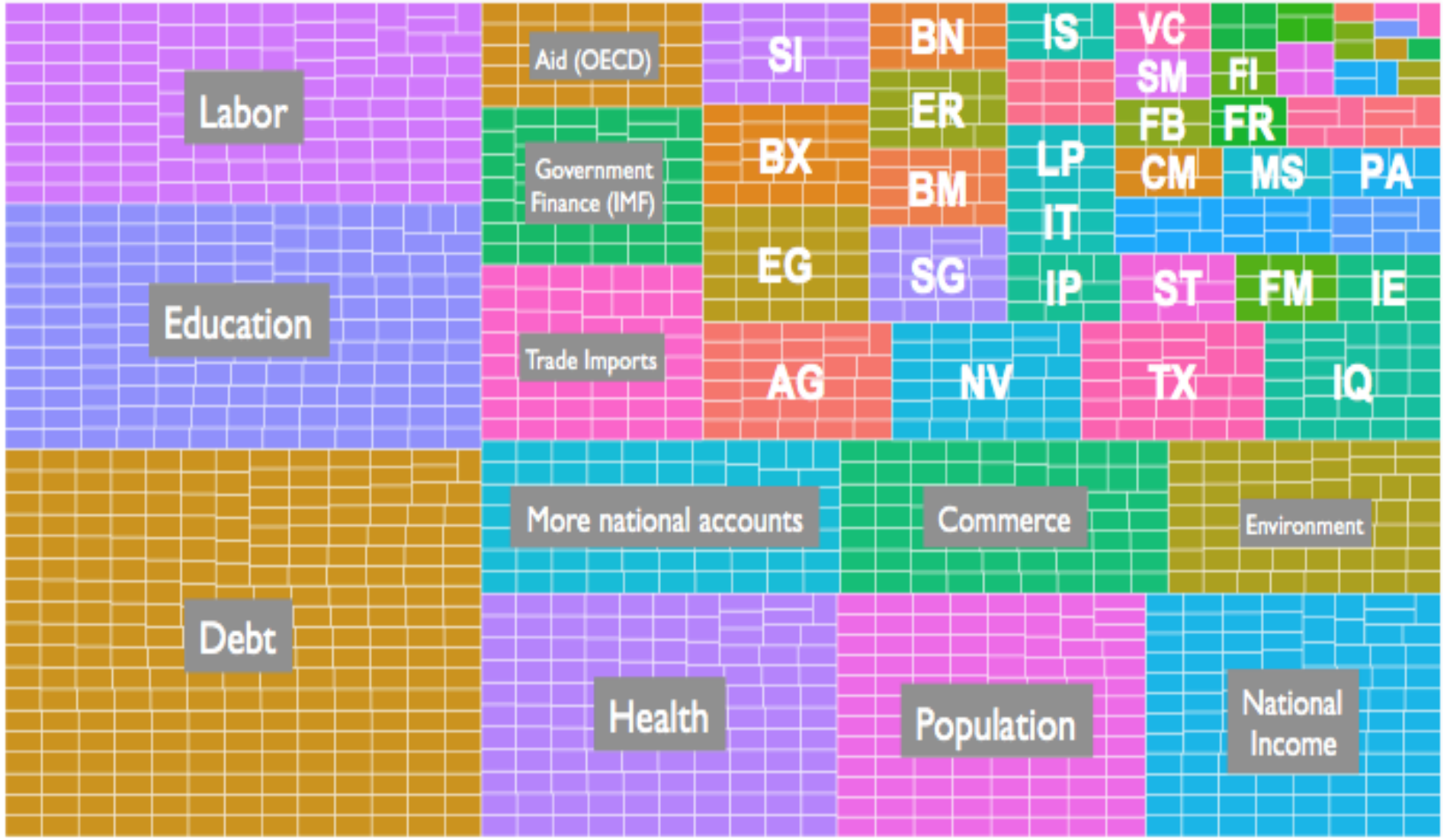
WDI: Global Coverage – 217 Countries/Economics



Note: These regions include economies at all income levels, and may differ from common geographic usage or from regions defined by other organizations. For more information see https://datahelpdesk.worldbank.org/knowledgebasearticles/906519-world-bank-country-and-lending-groups.

Data Coverage: 1500+ Indicators from year 1960

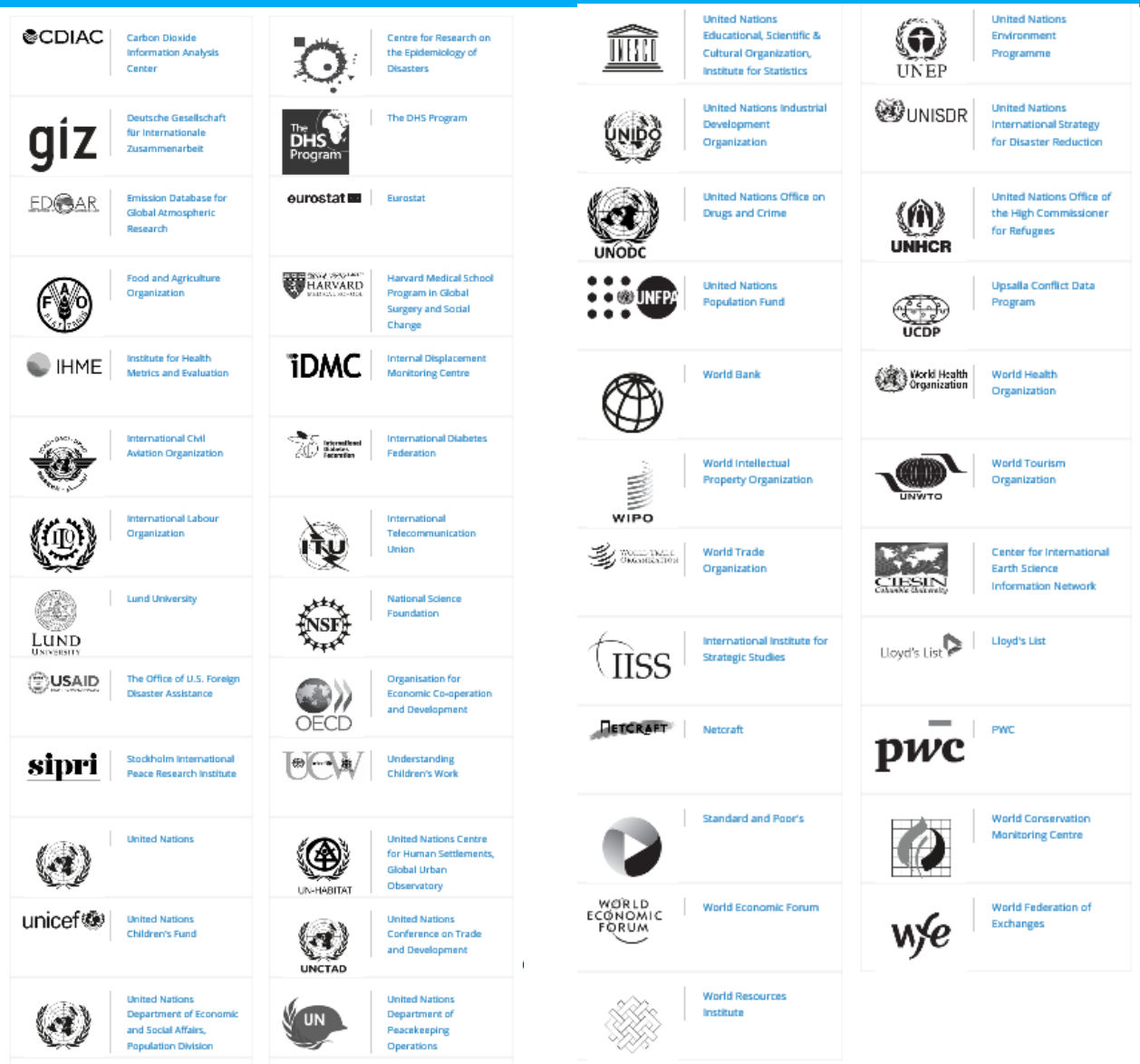


Each small box is an indicator, that are grouped by first two letters of the indicator code which is thematic.

Criteria for Inclusion of indicators in WDI

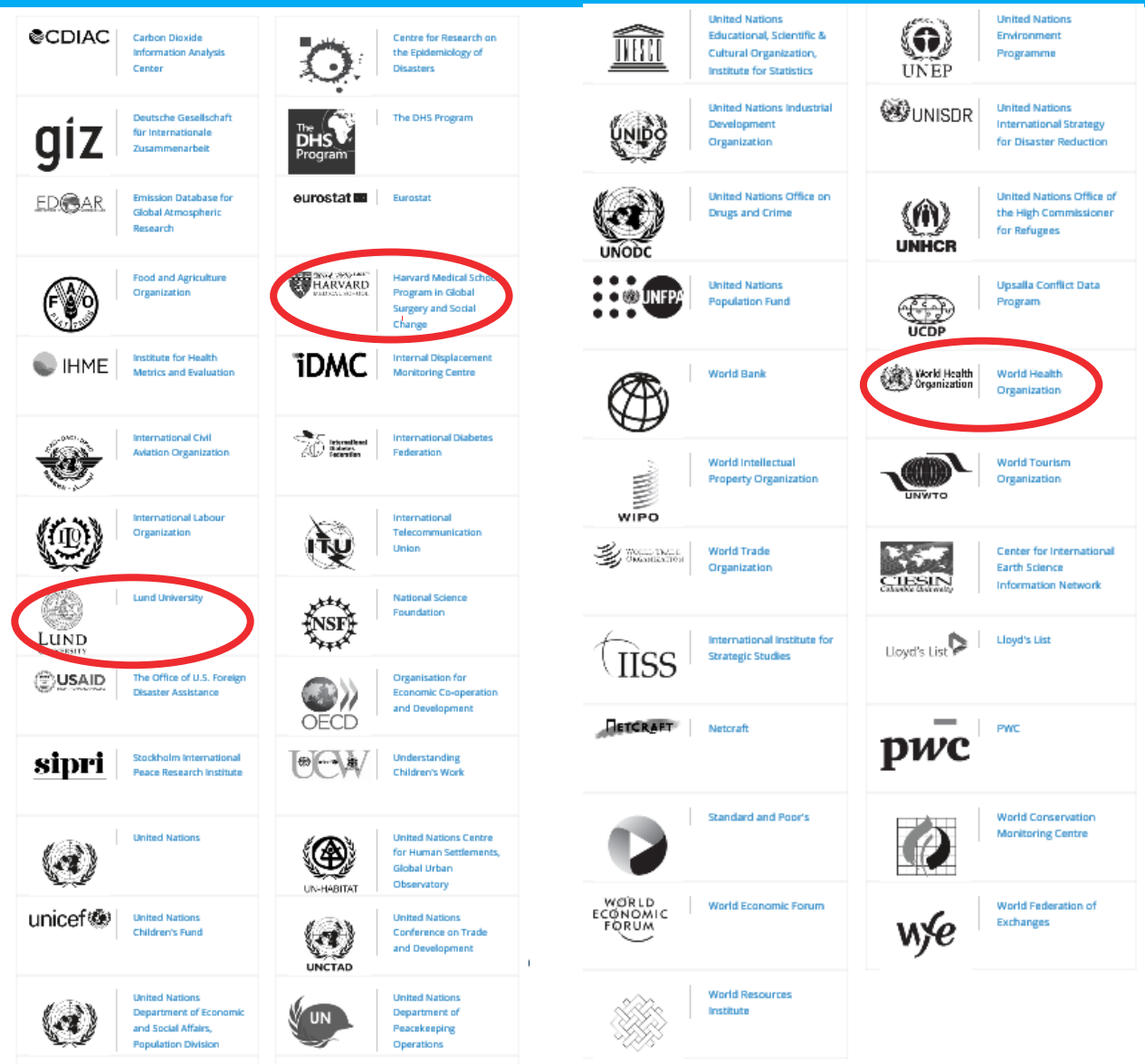
1. Development relevance
2. Good data coverage – across the world, and over time (trend data if possible)
3. Comparability across countries and across time (consistent definitions and methodology)
4. Good reliable source with regular updates

Data Sources: 50+ International Organizations, 200+ NSOs



- Producing WDI data involves:
  - 50+ international organizations
  - 200+ NSOs
  - WB country economists from 150 countries
- WDI indicators are updated quarterly (July, September, December and April) or more
- ⅔ of the data come from external partners
- Sources include admin data, academia & household surveys

Data Sources: 50+ International Organizations, 200+ NSOs



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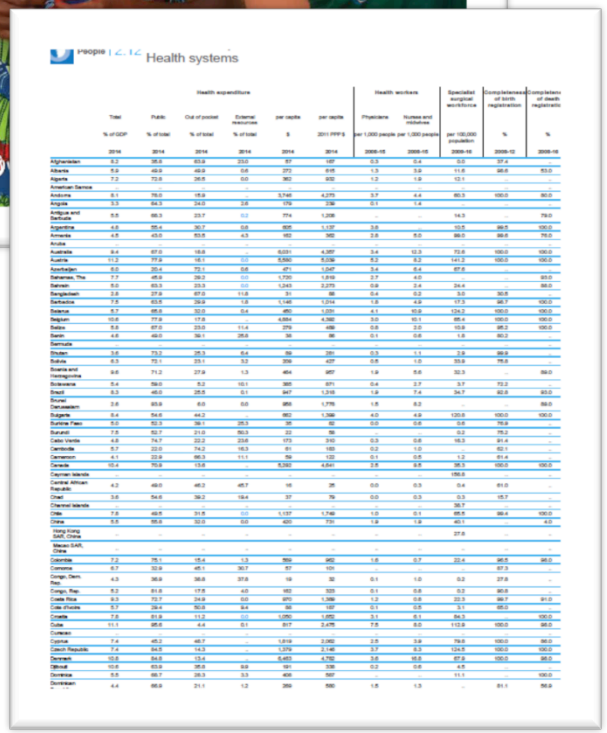
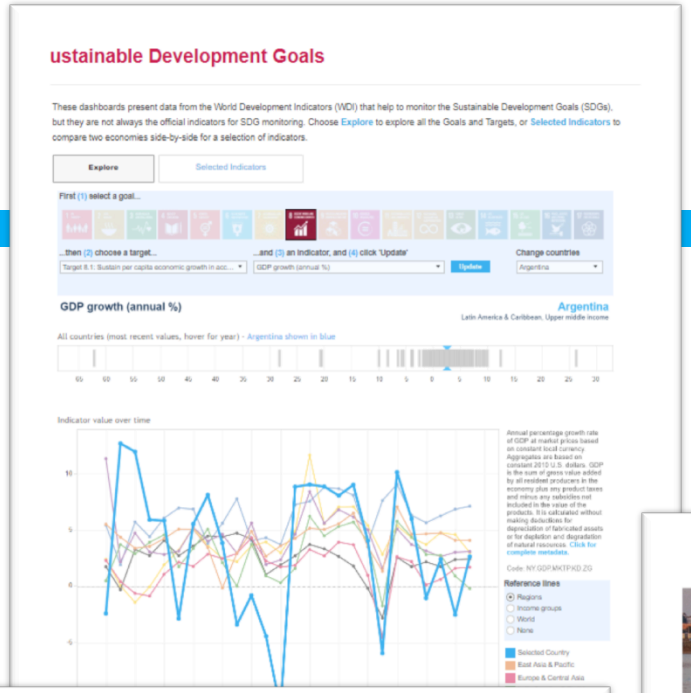
WDI Usage Statistics (approx. annualized)

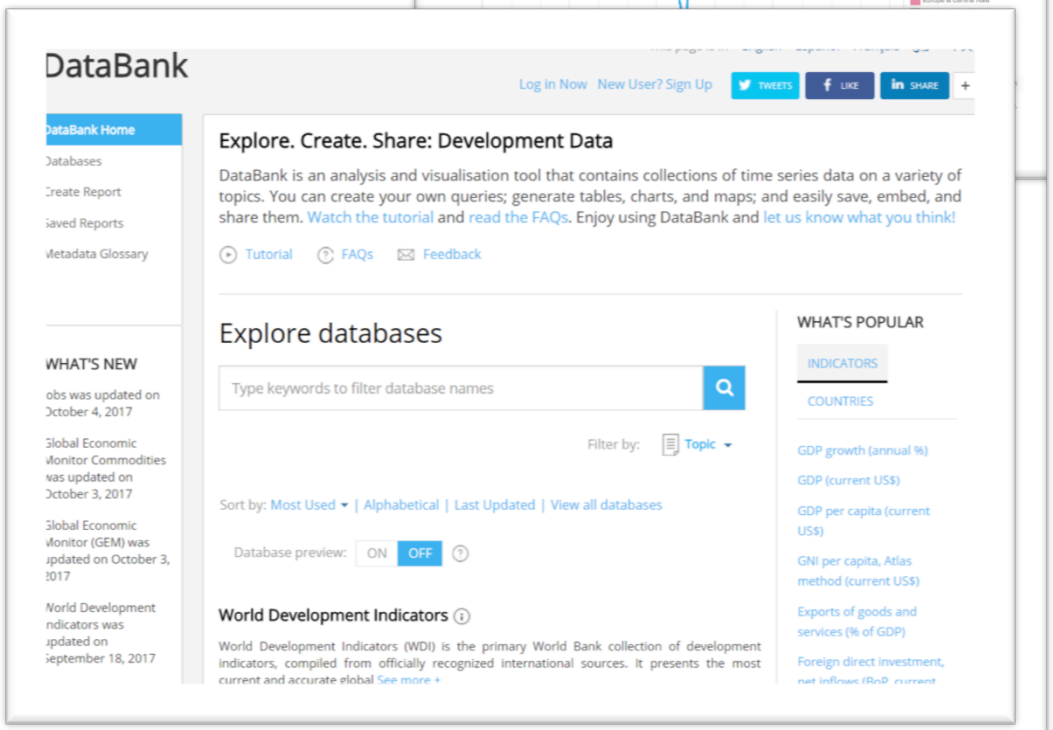
Channel	**“Views” (‘000s)**	**Unique users (‘000s)**
Book (incl. print & OKR pdf)		65
Bulk download	345	75
Tables online	1,500	500
Databank (WDI only, = 50% total)	9,300	1,500
data.worldbank.org	80,000	30,000 20-40,000
API data queries	80,000	
Google infobox	80,000 (17-170,000)	

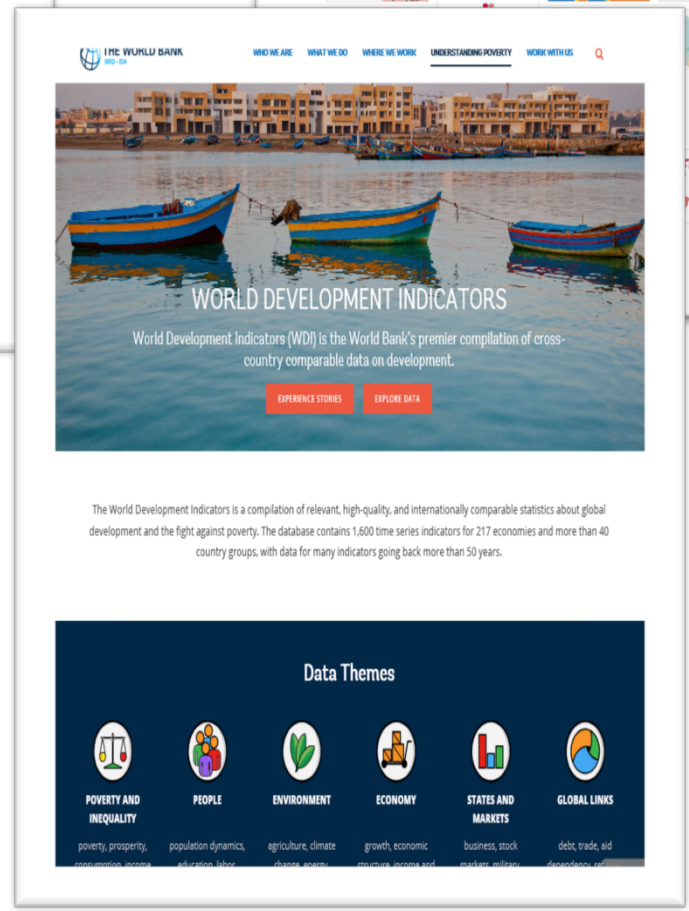
WDI PRODUCTS

- WDI database
- WDI book/WDI online
- Online tables
- Atlas of SDGs
- SDG dashboards



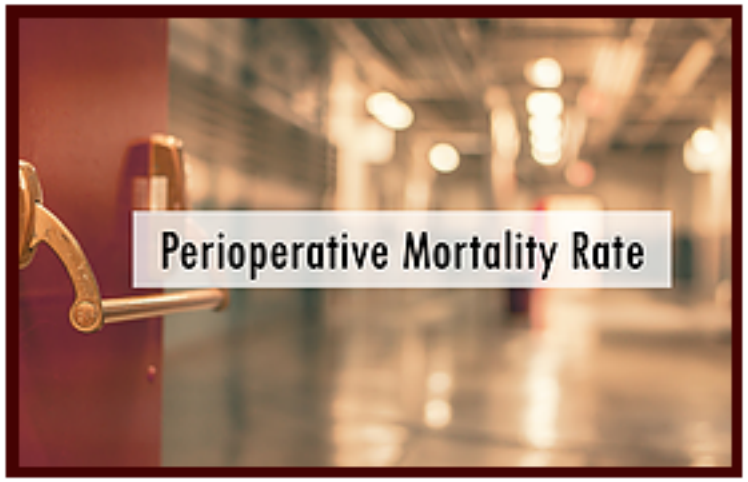




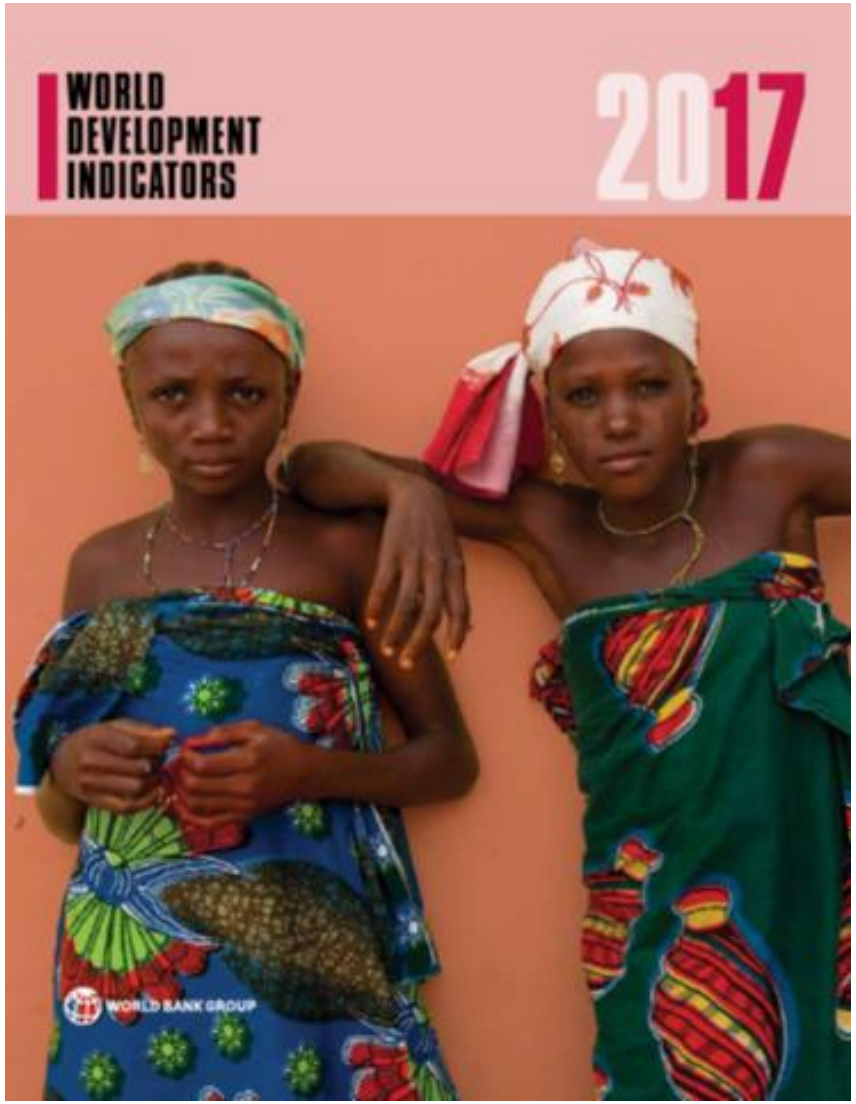


Global Surgery Indicators

Global Surgery 6 Indicators



Global Surgery Indicators and WDI



- Early 2015: WDI team was contacted by the global surgery team
- June 2015: Global surgery team and WDI team met and agreed to work towards publishing the global surgery indicators
- November 2015: Global surgery data on 6 indicators were shared with the WDI team
- April 2016: World Development Indicators 2016 published the 4 surgery indicators (#2,3,5,6) (2 indicators (#1,4) were not published due to low data coverage)
- April 2017: SAO density & surgical volume data were updated in World Development Indicators 2017
- April 2018: More SAO density and surgical volume data were added from Pacific countries
- July 2018: Time-series financial risk protection data were added

Progress - Data coverage of 6 global surgery indicators

	WDI 2016		WDI 2017		WDI 2018	
	#	(%)	#	(%)	#	(%)
1 Geographic accessibility *	14	(6%)	14	(6%)	14	(6%)
2 SAO density	173	(80%)	173	(80%)	174	(80%)
3 # of surgical procedures (non-modelled)	33	(15%)	58	(27%)	69	(32%)
4 Perioperative mortality rates *	19	(9%)	19	(9%)	19	(9%)
5 Risk of Impoverishing expenditure	186	(86%)	186	(86%)	149**	(69%)
6 Risk of catastrophic expenditure	186	(86%)	186	(86%)	149**	(69%)

* Not published in WDI ** Time series data

Global Surgery Indicators in WDI: How many times users are viewing

between May 1 2017 – April 30 2018

All WDI Indicators: Views on https://data.worldbank.org *	21,485,890
All health indicators (SH.* domain)	1,375,847
SH.MED.SAOP.P5 (SAO density)	5,253
SH.SGR.PROC.P5 (Surgical volume)	12,577
SH.SGR.IRSK.ZS (Risk of impoverishing expenditure)	1,099
SH.SGR.CRSK.ZS (Risk of catastrophic expenditure)	835

*This includes only the views from the Open Data home page. This excludes other sites like DataBank.

Global Surgery Indicators in WDI: How many times users are viewing

between May 1 2017 – April 30 2018

Totally the 4 global surgery indicators were viewed by users **20,000 times** a year between 2017-18

Promoting Global Surgery Indicators in WDI

SDG ATLAS 2018

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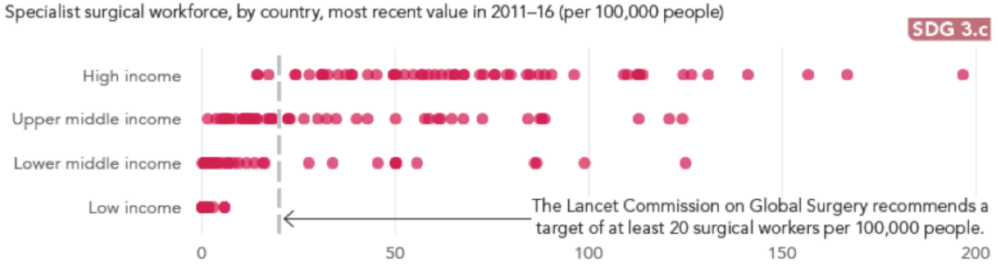
Good health and well-being

Ensure healthy lives and promote well-being for all at all ages

Low-income countries have a severe shortage of specialist surgical workers. All low- and most lower-middle-income countries have fewer than the target number.

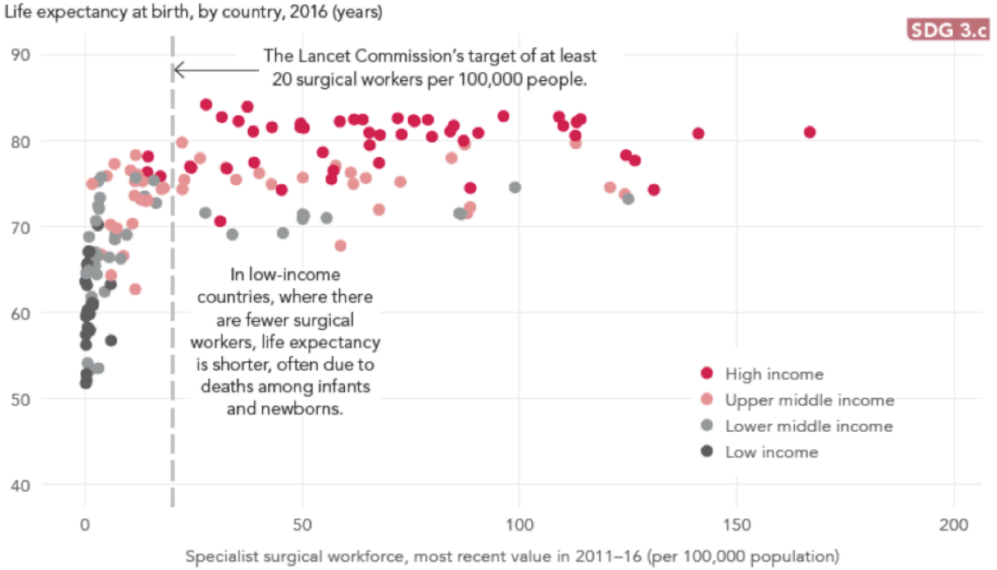
Specialist surgical workforce, by country, most recent value in 2011–16 (per 100,000 people)



Source: The Lancet Commission on Global Surgery. World Development Indicators (SH.MED.SAOP.P5).

Better staffed health systems can lead to improved health outcomes. For example, life expectancies are higher where there are more surgical workers per person.

Life expectancy at birth, by country, 2016 (years)



Source: The Lancet Commission on Global Surgery and UN Population Division. WDI (SH.MED.SAOP.P5; SP.DYN.LE00.IN).

WDI BLOGS: PROMOTING GLOBAL SURGERY INDICATORS

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Measuring surgical systems: systems strengthening

SUBMITTED BY JOSH NG-KAMSTRA ON TUE, 06/14/2016

CO-AUTHORS: NAKUL RAYKAR, JOHN G MEARA, MARK G SHRIME

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WORLD DEVELOPMENT INDICATORS 2016

This is a companion blog to the series of blogs from th
a guest contribution from colleagues involved in the L

The relative number of surgical speciali

Number of specialist surgical, anaesthetic, and obstetric (SAO) pr

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Surgical care – an overlo

SUBMITTED BY EMI SUZUKI ON WED, 02/14/2018

CO-AUTHORS: JOHN G MEARA, MARK G SHRIME

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Five billion people—two thirds of world pop
anesthesia and obstetric (SAO) care while a t
anesthesia decision-making or treatment. Trea
Despite such huge burden of disease, safe and

Why? It may be because surgery and anesthesi
that address the breadth of human disease —
trauma-related disease and injuries, and intern
vertical disease-based programs.

Prior to 2015, global data on surgery, anesthes
that "We can't manage what we don't measure'
Surgical, Obstetric and Anesthesia (SAO) indica
analysis of these data show large gaps in SAO c

There are 70-times as many surgical worke
compared with low-income countries

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Measuring surgical systems worldwide: an update

SUBMITTED BY PARISA KAMALI ON MON, 02/12/2018

CO-AUTHORS: ISSY MARKS, GODFREY SAMA, DOMINIQUE VERVOORT, JUSTINE DAVIES

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Why are people dying following surgery in Africa?

SUBMITTED BY BRUCE BICCARD ON FRI, 08/03/2018
CO-AUTHORS: HYLA-LOUISE KLUYTS, DOLLY MUNLEMVO, FARAI DANIEL MADZIMBAMUTO

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Surgery is a core component of health. It is a cost-effective intervention[1] which is important for global health.[2] However, to fully realize the health benefits of surgery, it needs to be safe. In the African continent —with a population of 1.2 billion people—it is estimated that approximately 95% do not have access to safe and affordable surgery. The Lancet Commission on Global Surgery has established six indicators to indicate the success of providing access to safe and affordable surgery.[3] Four of them are included in the World Bank's World Development Indicators (WDI) database. The perioperative mortality rate (POMR)—the number of in-hospital deaths from any cause in patients who have undergone a procedure done in an operating theatre, divided by the total number of procedures—is one of the indicators the success in achieving safe surgery, yet it is not included in the WDI as the data is sparse, including the one from Africa. The recent publication of the African Surgical Outcomes Study (ASOS) has cast an important light on the POMR in Africa.[4]

ASOS has shown that for patients in Africa fortunate enough to access surgical care, the patient outcomes following surgery are relatively poor. ASOS demonstrated that African surgical patients were twice as likely to die following surgery when compared to the global average, despite a similar complication rate to the global average (Table 1). This is despite the fact that surgical patients in Africa are relatively healthy when compared with similar international surgical patient cohorts,[5] and one would thus expect them to do well postoperatively. Therefore, if the data from ASOS had been risk-adjusted for patient comorbidities, it is likely that the mortality following surgery in Africa is more than twice the global average. The results from ASOS are compelling as they provide comprehensive data on surgical outcomes in Africa, from 25 countries, 247 hospitals, and over 11,000 patients.

Table 1. Mortality, complications and 'failure to rescue' following surgery

Source: ISOS International Surgical Outcomes Study ASOS African Surgical Outcomes Study[4]

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Cured Into Destitution: the risk of financial catastrophe after surgery

SUBMITTED BY KATHRYN WALL ON MON, 08/20/2018
CO-AUTHORS: EMI SUZUKI, JOHN G MEARA, MARK G SHRIME

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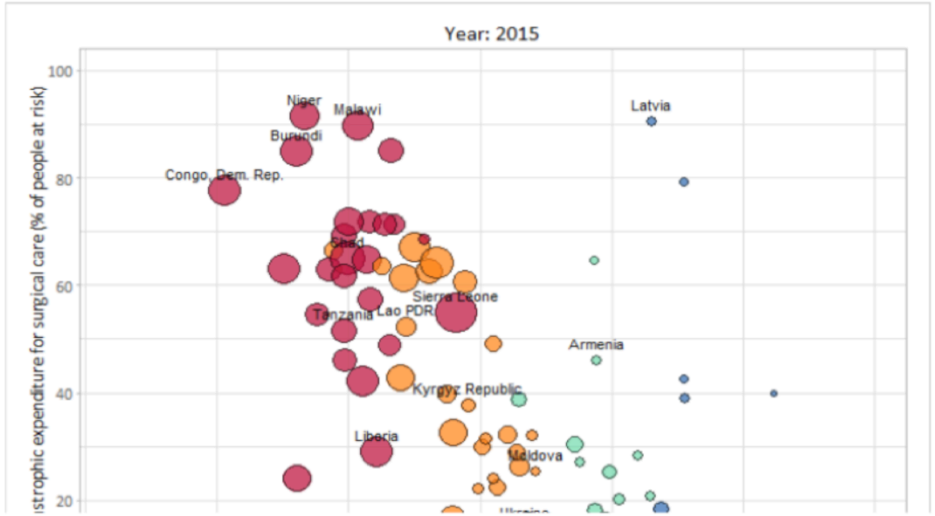
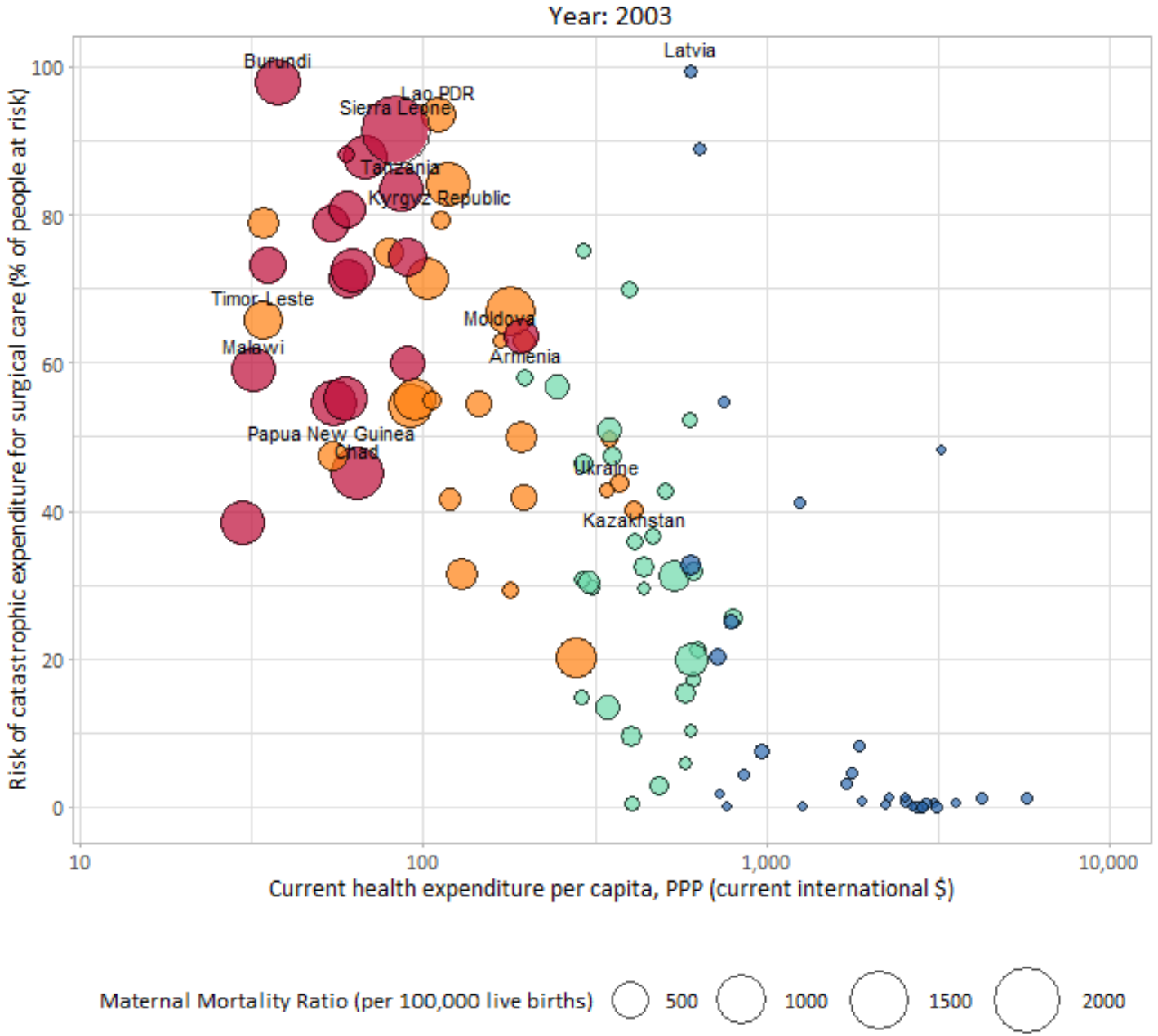
Low-income countries face the highest risk of financial catastrophe due to surgery and have made the slowest progress



Cured Into Destitution: the after surgery

SUBMITTED BY KATHRYN WALL ON MON, 08/20/2018
CO-AUTHORS: EMI SUZUKI, JOHN G MEARA, MARK G SHRIME



TWITTER: PROMOTING GLOBAL SURGERY INDICATORS

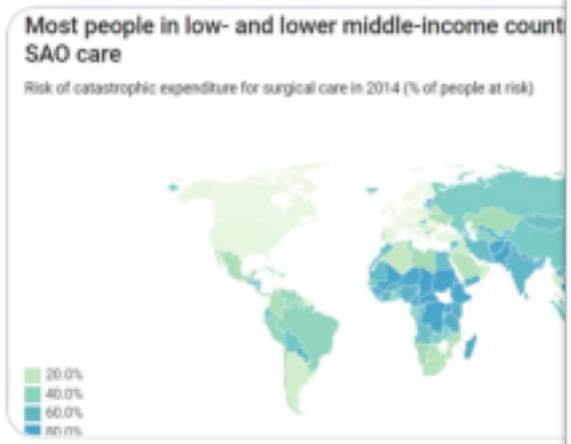
World Bank Data @worldbankdata · 12h

The delivery of safe and quality SOA c
for the realization of many of the Susta
Development Goals, including: Good h
well-being (#sdg3); No poverty (#sdg
equality (#sdg5), and Reducing inequa
(#sdg10). wrld.bg/p0QV30ilZdr

3

World Bank @WorldBank · Feb 27

9 out of 10!
That's the number of people in low-income countries at risk of becoming poor due to direct out-of-pocket payments for surgical and ar
when surgical care is required:
wrld.bg/EHmY30iCAZd



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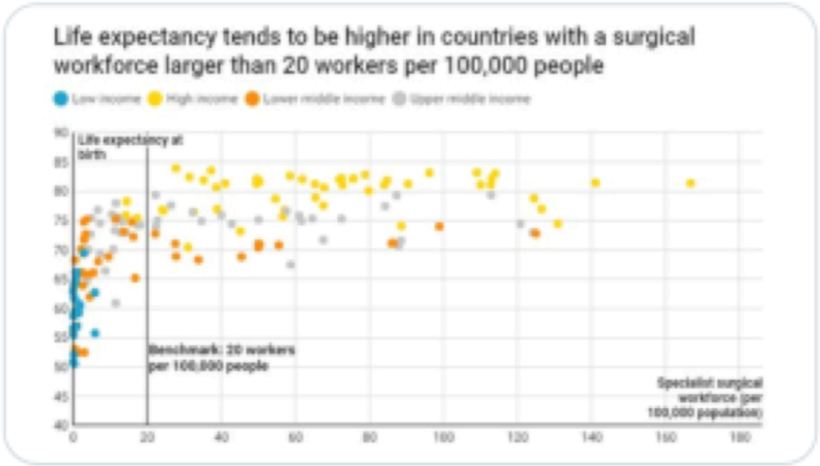
World Bank @WorldBank · Feb 18

Countries with more surgical workers tend to have a higher #LifeExpectancy. And most low-income countries fall below the benchmark of 20 workers per 100k people: wrld.bg/5owM30ioTIL



2 39 60

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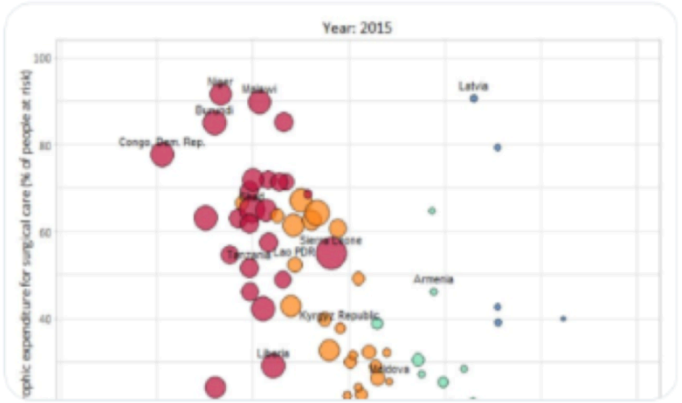
TWITTER: PROMOTING GLOBAL SURGERY INDICATORS

World Bank @WorldBank · 4d

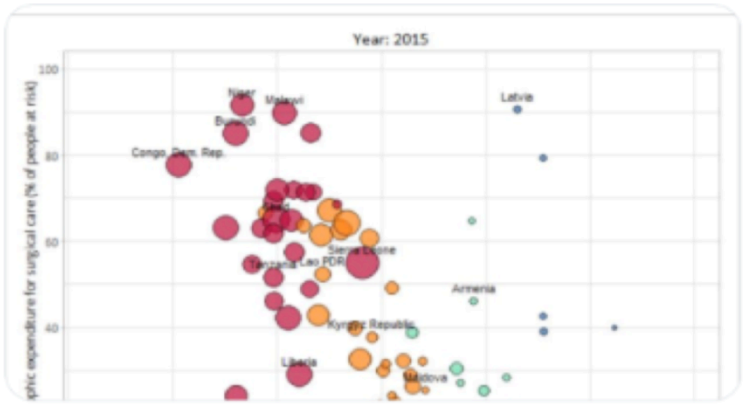
Over two billion people cannot afford surgery 💉😁 if they needed it today. Read why low-income countries face the highest risk of financial catastrophe: wrld.bg/z17730ltZMF



6 67 96

Jim Yong Kim @JimYongKim · 1d

New data shows that 181 million people are thrown into poverty each year because they needed #surgery. Access to quality, affordable healthcare including surgical care is essential to good health—and is the very foundation of #humancapital. #healthforall



World Bank Research

5 54 62

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Data quality

Dimensions of data quality

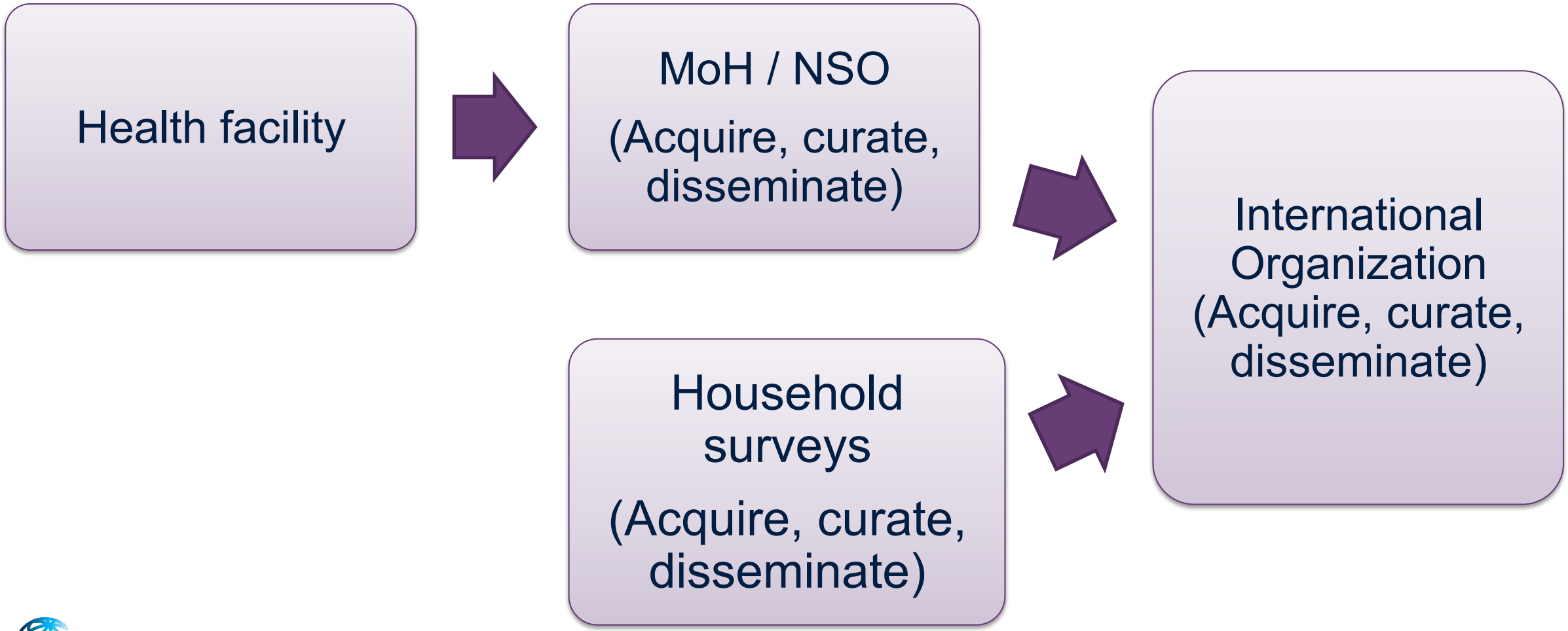
Completeness	Data are available for all required data elements. Completeness of indicator data
Accuracy	Proximity of the data to the "truth" - effected by systematic biases e.g. omission and misclassification
Validity	The data measure what they intend to measure
Reliability	Data are measured and collected consistently
Timeliness	Is data available for use in a timely manner
Comprehensiveness	Data has all the detail needed for the creation of useful indicators
Utility	Data produced is useful and pertinent for policy and programmatic needs
Accessibility	Can these data be accessed by potential data users

Source: Presentation of Dr. Hannah Blencowe

Challenges in data quality for 6 global surgery indicators

	Access	SAO	Volume	POMR	FRP (modelled)	FRP (non-modelled)
Completeness	X			X		X
Accuracy	X	X	X	X	X	X
Validity	X			X	X	X
Reliability	X	X	X	X		X
Timeliness	X		X	X		X
Comprehensiveness	X			X		X
Utility						
Accessibility	X			X		X

IDEAL DATA FLOW OF GLOBAL SURGERY INDICATORS



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Challenges & opportunities for data collection

Capacity issues

- Capacity building and training

No incentives

- Request needed from international organizations.
- International organizations use these country data

No resources

- Data collection should become higher priority

Lack of communication/trust/understanding

- Better partnerships needed at all levels. Need solid data collection system.
- Centralized data management system (by MoH/NSOs & by International organizations)

Unclear what & how to measure

- Need clear international standards (definition, methodology),
- Guide/manual for countries

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GOOD EXAMPLE OF PROMOTING COUNTRIES TO GENERATE DATA: UNAIDS' DEVELOPMENT OF CORE PARTNERSHIPS

"Through the development of core partnerships with country teams, implementers, demographers, mathematicians, epidemiologists and international organizations, UNAIDS has developed the capacity of country teams to produce internationally comparable HIV estimates." (Mary Mahy et al. 2017)

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VOL. 10, 1291169
http://dx.doi.org/10.1080/16549716.2017.1291169

Taylor & Francis
Taylor & Francis Group

ORIGINAL ARTICLE

OPEN ACCESS Check for updates

Producing HIV estimates: from global advocacy to country planning and impact measurement

Mary Mahy[a], Tim Brown[b], John Stover[c], Neff Walker[d], Karen Stanecki[e], Wilford Kirungi[f], Txema Garcia-Calleja[g] and Peter D. Ghys[a]

Key words to better data collection

Partnerships

Capacity building

Thank you