

*Partnership for Capacity Development in Household
Surveys for Welfare Analysis*

Designing Household Surveys to Measure Poverty

November 27 – December 1, 2017

Perugia, Italy

SDGs: Focus on Health Indicators

Stefano Vella MD

Nazionale Center for Global Health

Istituto Superiore di Sanità





CENTRO NAZIONALE PER LA SALUTE GLOBALE

ITALIAN CENTER FOR GLOBAL HEALTH

Research And Action To Fight Health Inequalities Worldwide



Basic and
Translational
Research



Clinical Epidemiology



Clinical Research



Education and
Training



Health Systems
Research, Innovative
Models of Care



International
Cooperation



Maternal, Newborn
and Child Health
(MNCH)



Migration Medicine



Natural Substances,
Traditional Medicine,
Integrated Medicine



Operational and
Implementation
Research



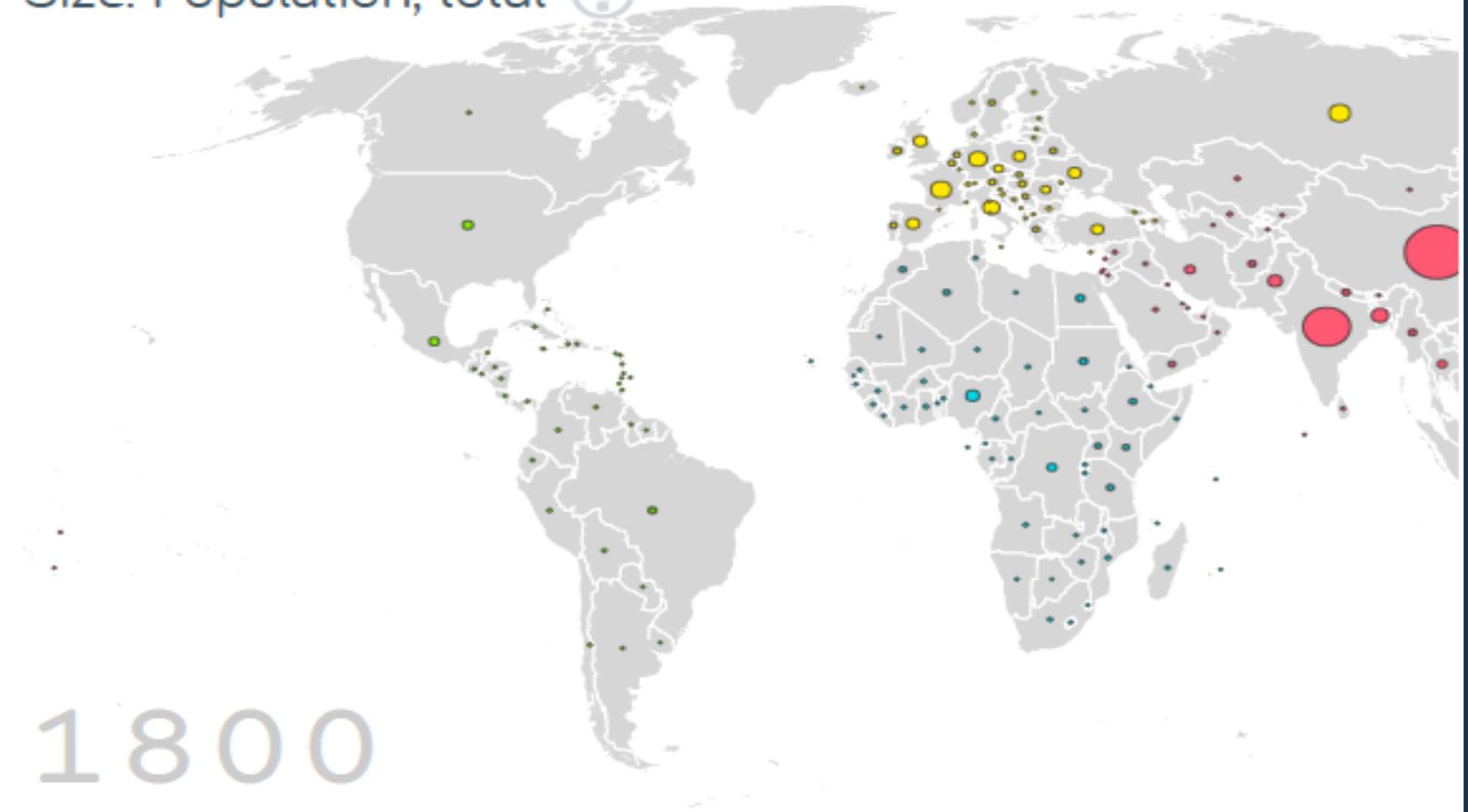
Policy and Advocacy



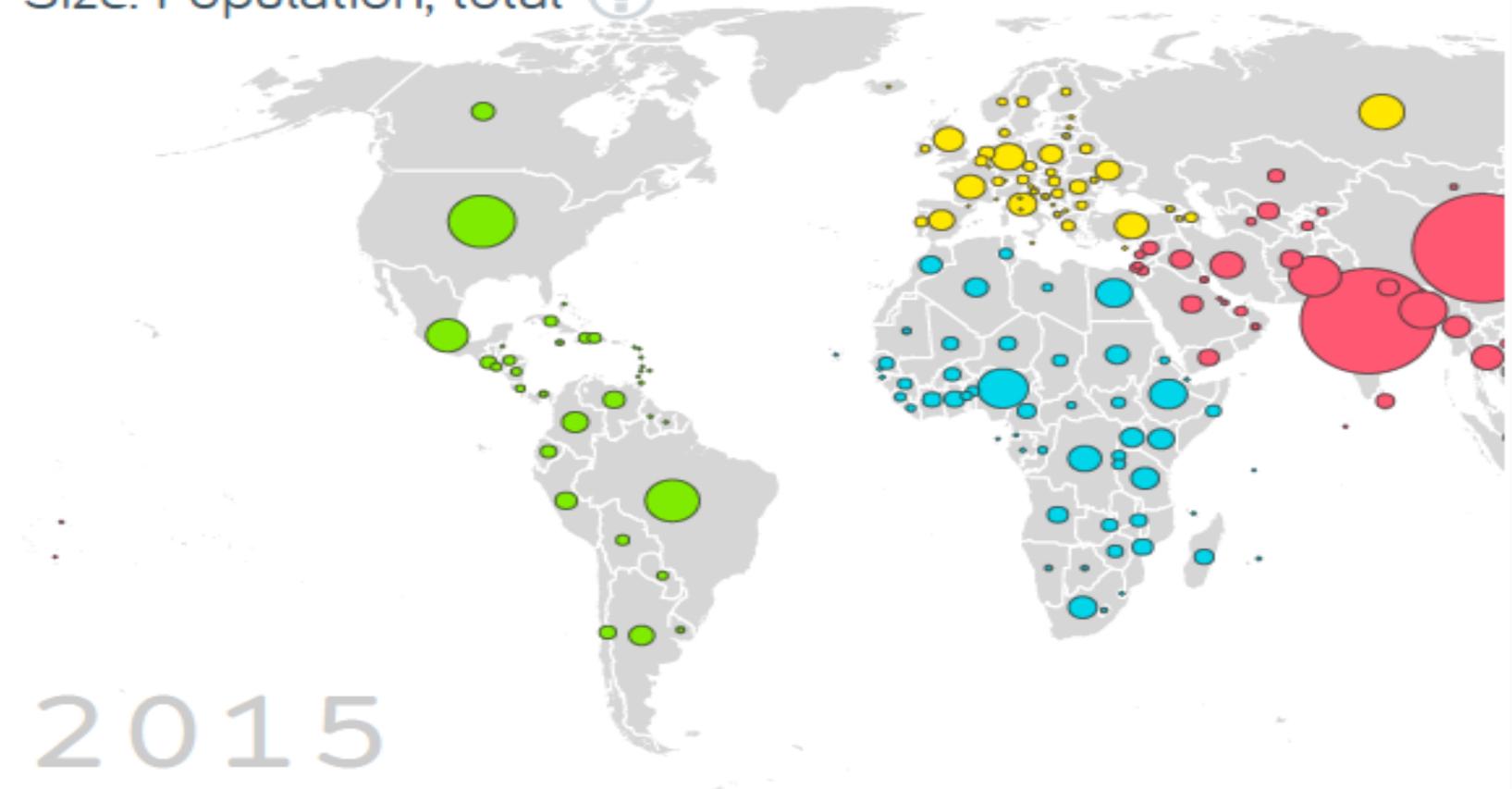
Work with
International
Organizations and
the UN System

1. The concept of Global Health

Size: Population, total 



Size: Population, total ?



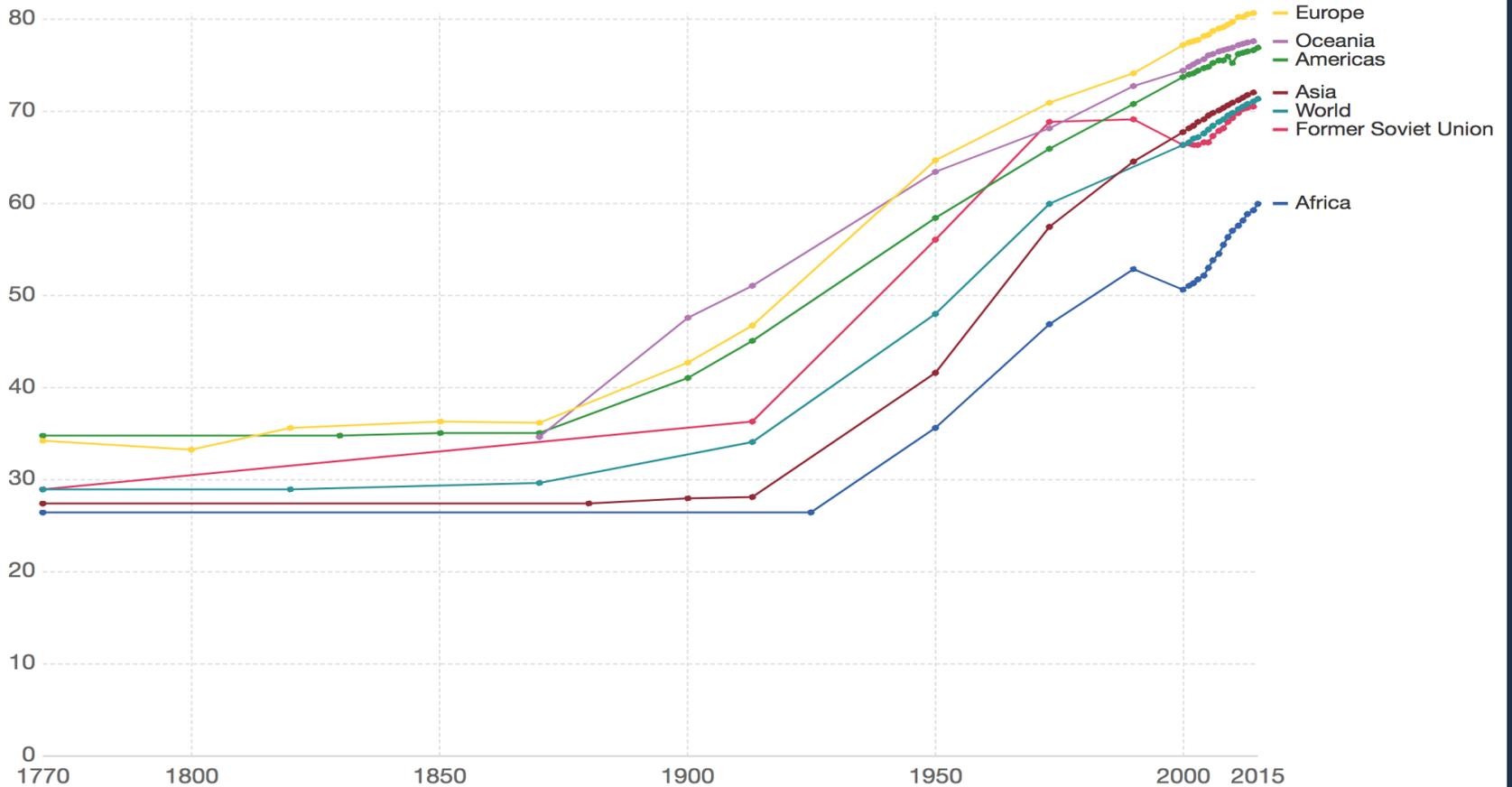
2015



The Growth of Life Expectancy

Our World
in Data

Life expectancy globally and by world regions since 1770



Source: Life expectancy – James Riley for data 1990 and earlier; WHO and World Bank for later data (by Max Roser)

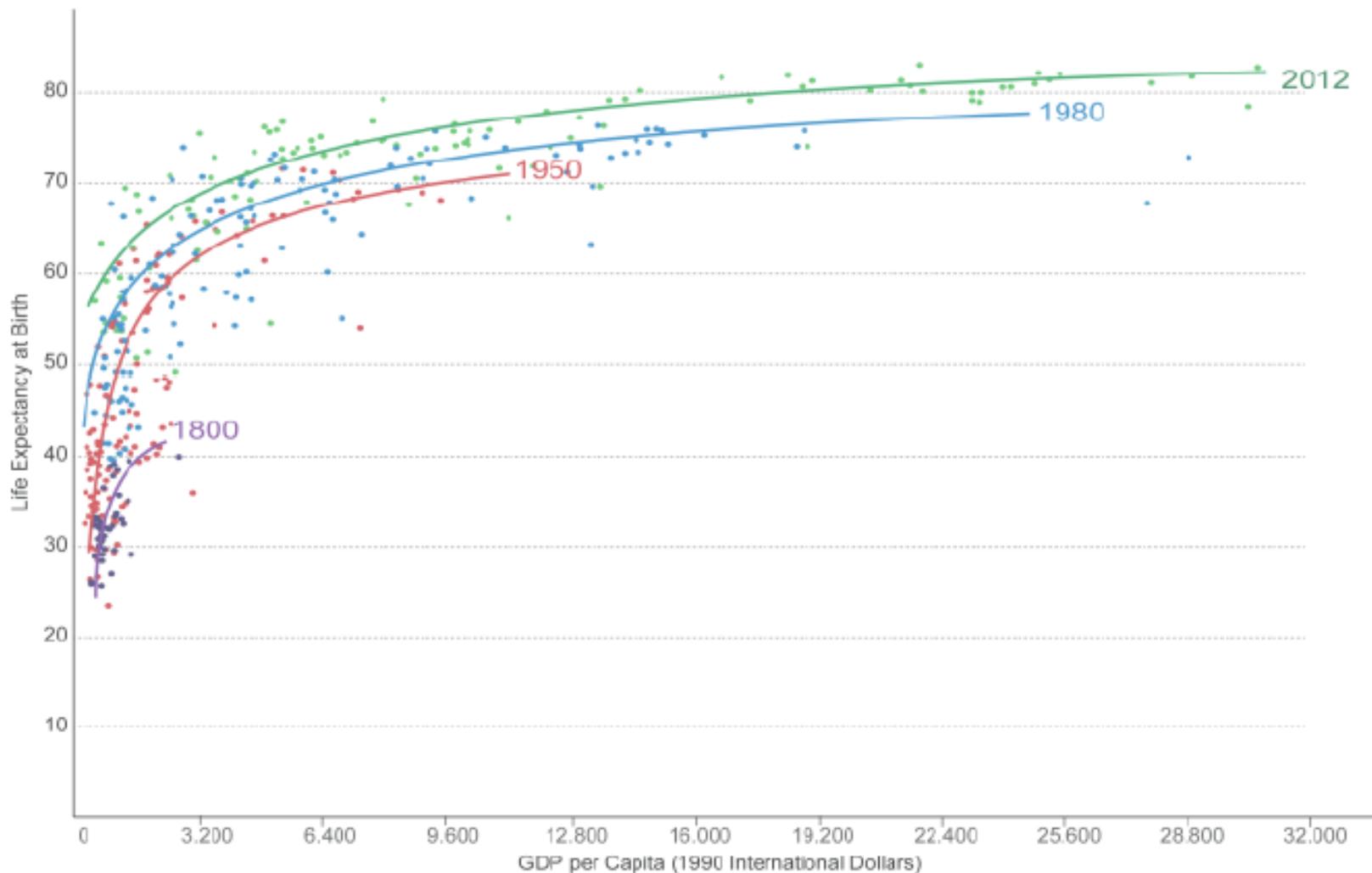
OurWorldInData.org/life-expectancy/ • CC BY-SA

and its determinants.....

DDP

Life Expectancy vs. GDP per Capita from 1800 to 2012 – by Max Roser

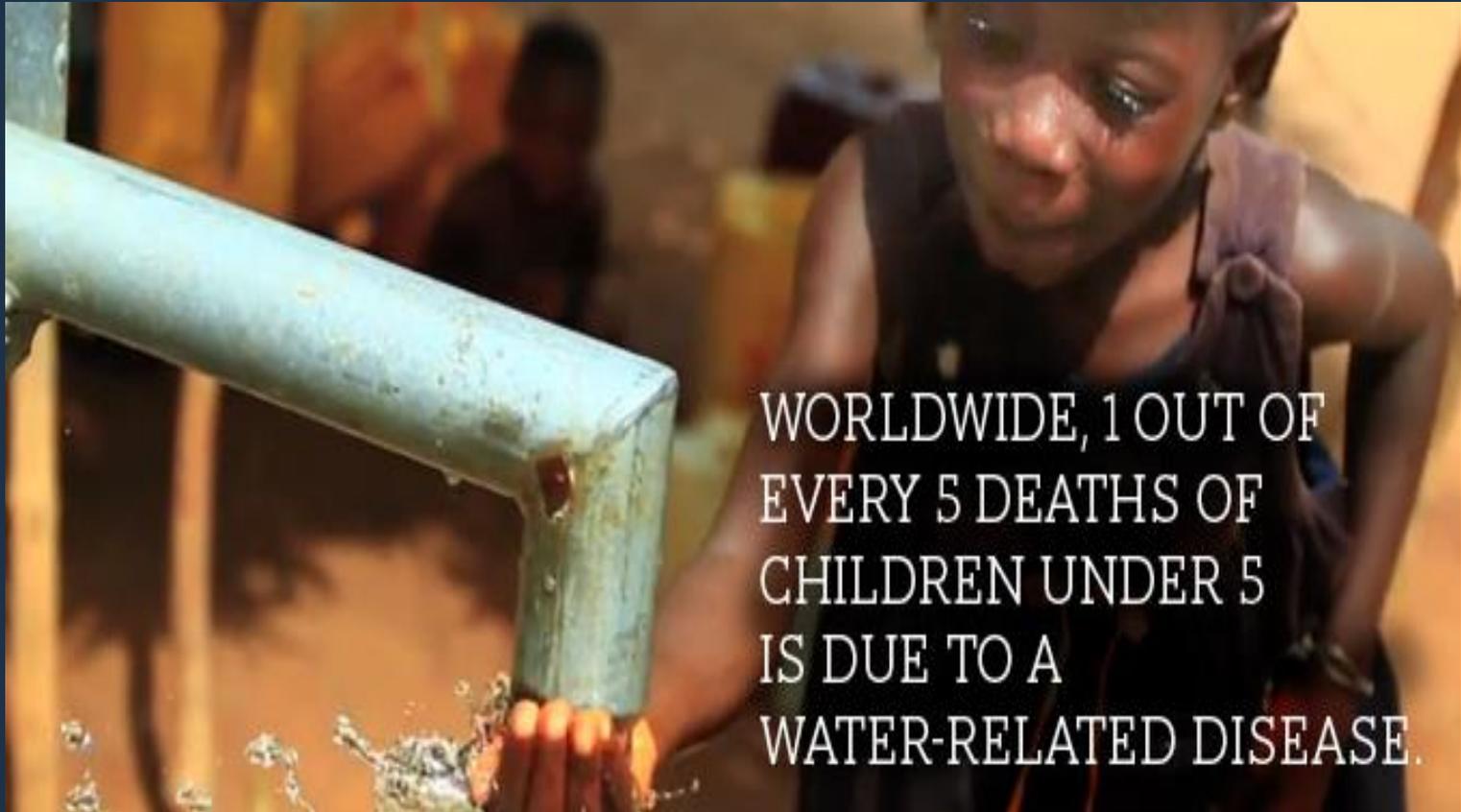
GDP per capita is measured in International Dollars. This is a currency that would buy a comparable amount of goods and services a U.S. dollar would buy in the United States in 1990. Therefore incomes are comparable across countries and across time.



Data sources: Data on life expectancy are from Gapminder.org; data on GDP per capita are from the 'New Maddison Project Database'.
The interactive data visualisation is available at [OurWorldinData.org](https://ourworldindata.org). There you find the raw data and more visualisations on this topic.

Licensed under CC-BY-SA by the author Max Roser.

Clean water



WORLDWIDE, 1 OUT OF EVERY 5 DEATHS OF CHILDREN UNDER 5 IS DUE TO A WATER-RELATED DISEASE.

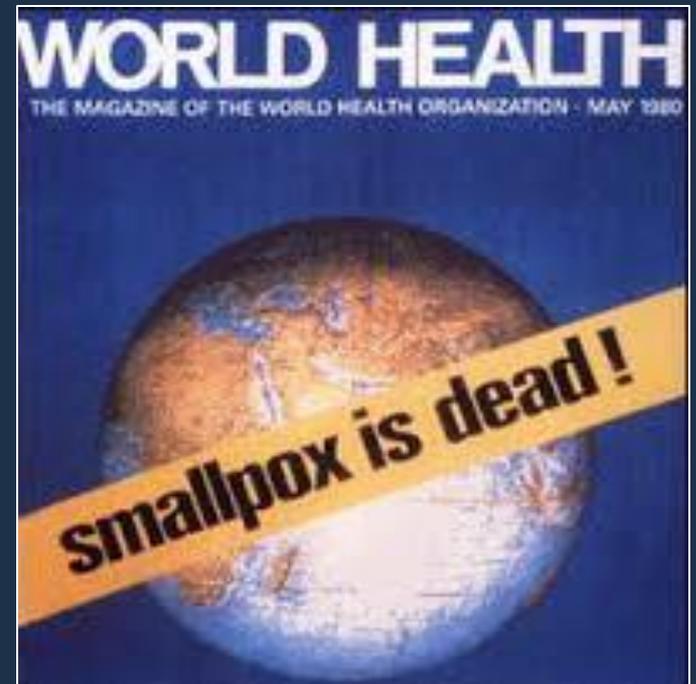
Social Determinants



Progress of Medicine



1796



1977

**Advancements in Health have not
been equally distributed**

Global inequalities

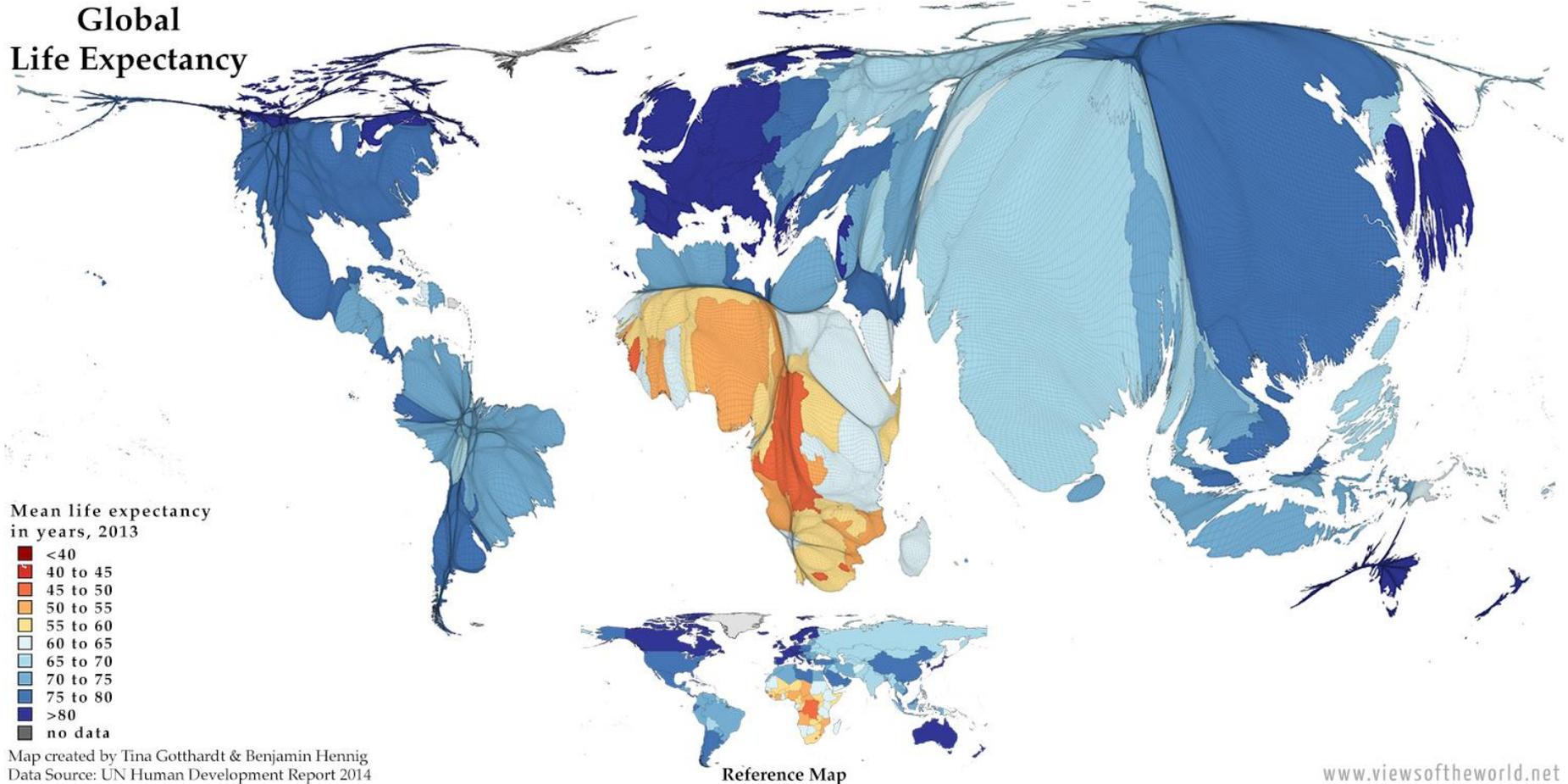
At least 20 million people die **prematurely** (half of them before the age of 5) in developing countries for lack of adequate access to basic health care. **They die for causes that are very often preventable or treatable.**

Despite the convergence on the concept of health as a human right, there still exist intolerable global inequalities in accessing health and health services and in terms of life expectancy and morbidity and mortality from **communicable and non-communicable diseases**.

The persistence of inequalities in terms of health - **not only between rich and poor countries, but also between different regions in the same country** - is also a contradiction to science, given the growing geographic interdependence of the **biomedical causes and of the social determinants of health and diseases**.

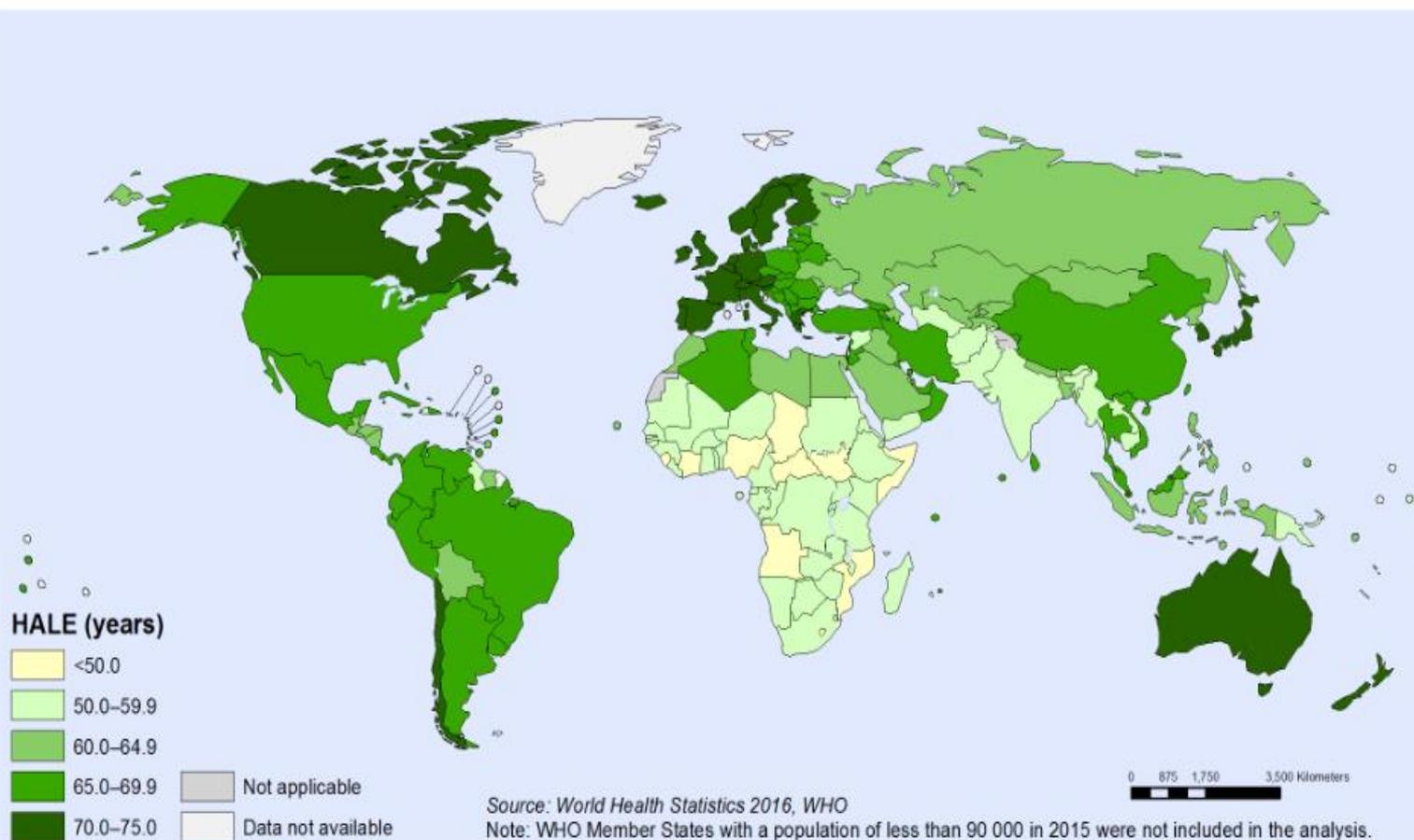
LIFE EXPECTANCY

Global Life Expectancy



Map created by Tina Gotthardt & Benjamin Hennig
Data Source: UN Human Development Report 2014

Healthy life expectancy (HALE) at birth, both sexes, 2015



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

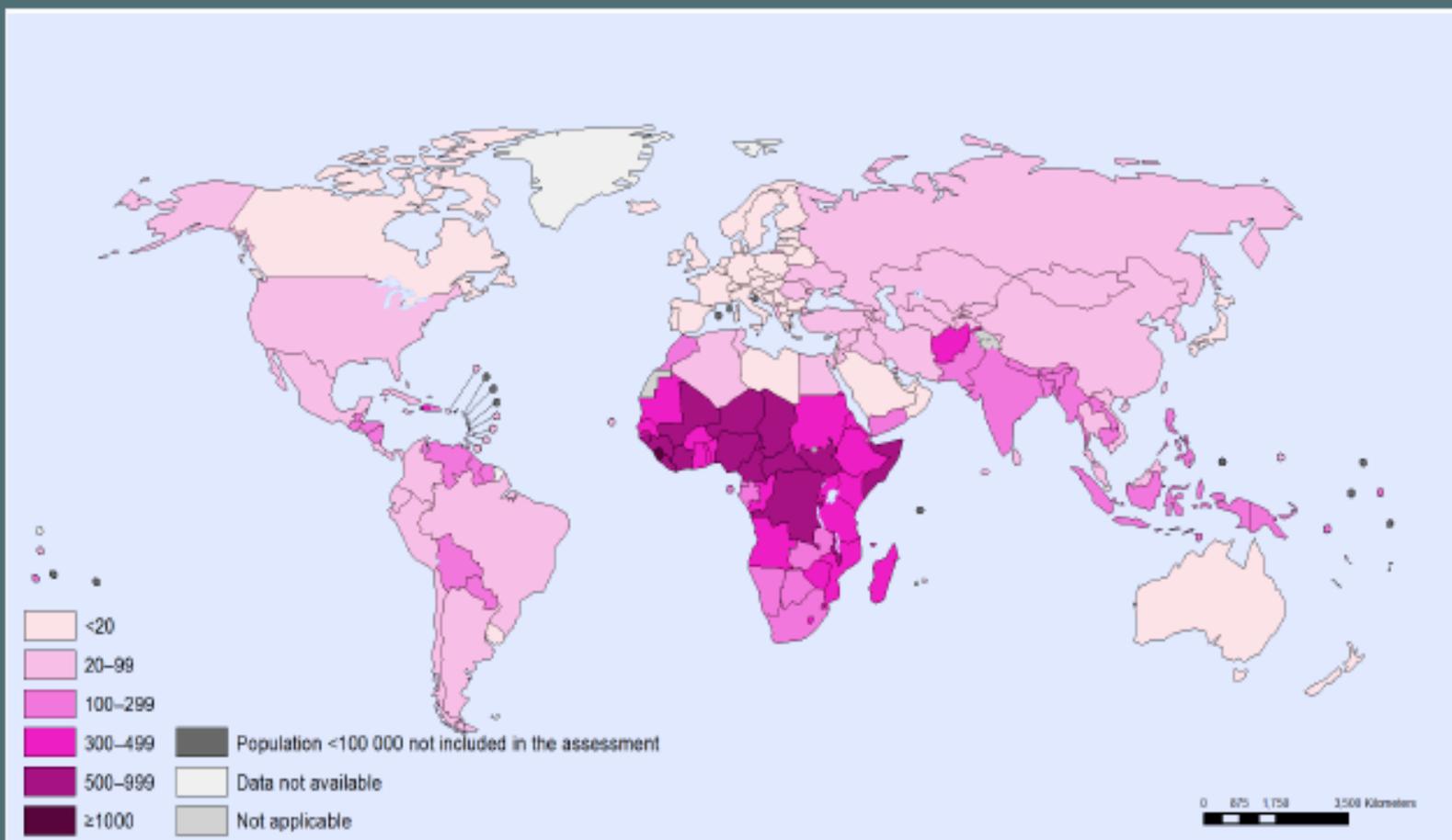
Data Source: World Health Organization
Map Production: Information Evidence and Research (IER)
World Health Organization



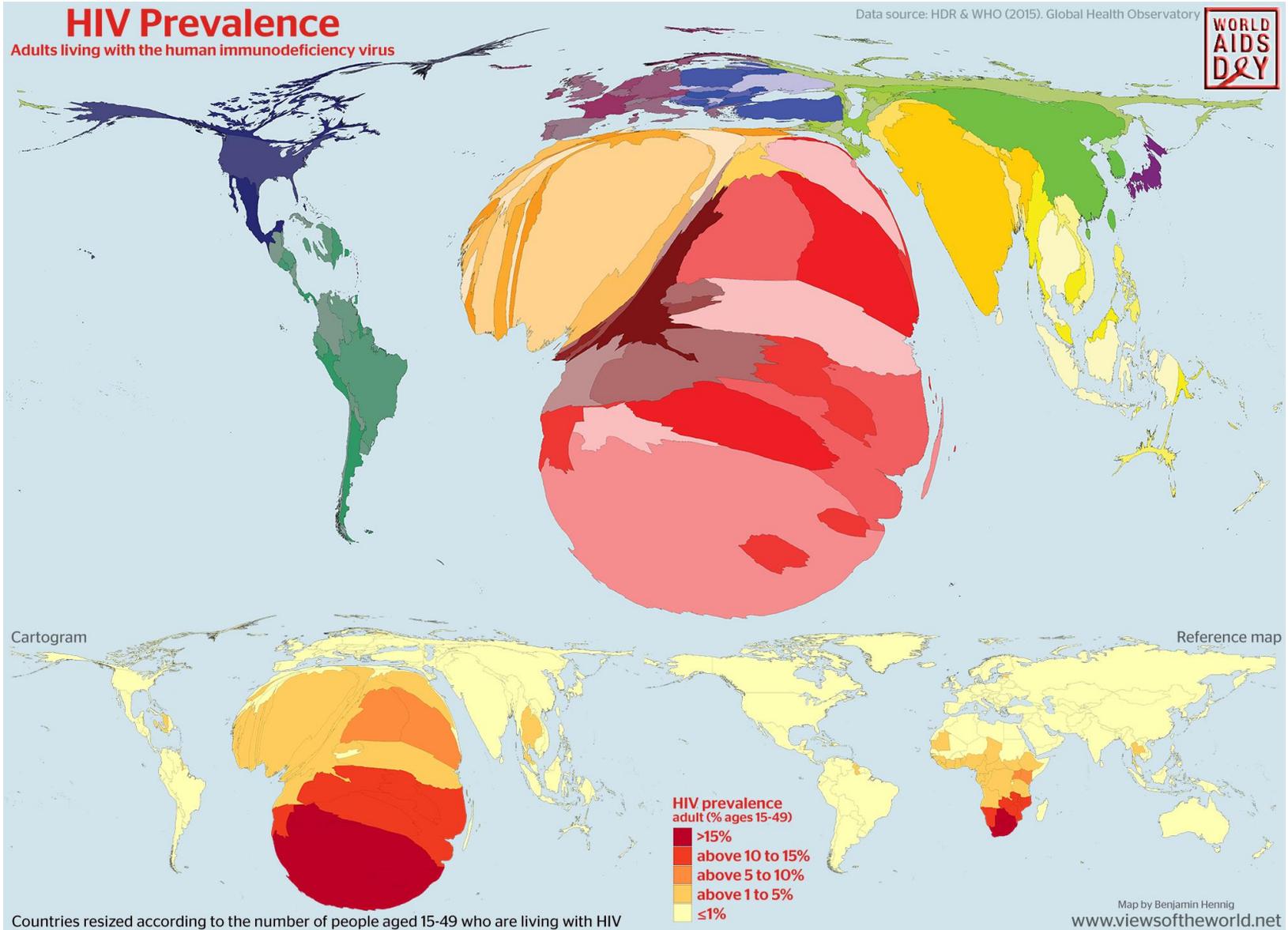
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MATERNAL MORTALITY RATIO

per 100 000 live births, 2013

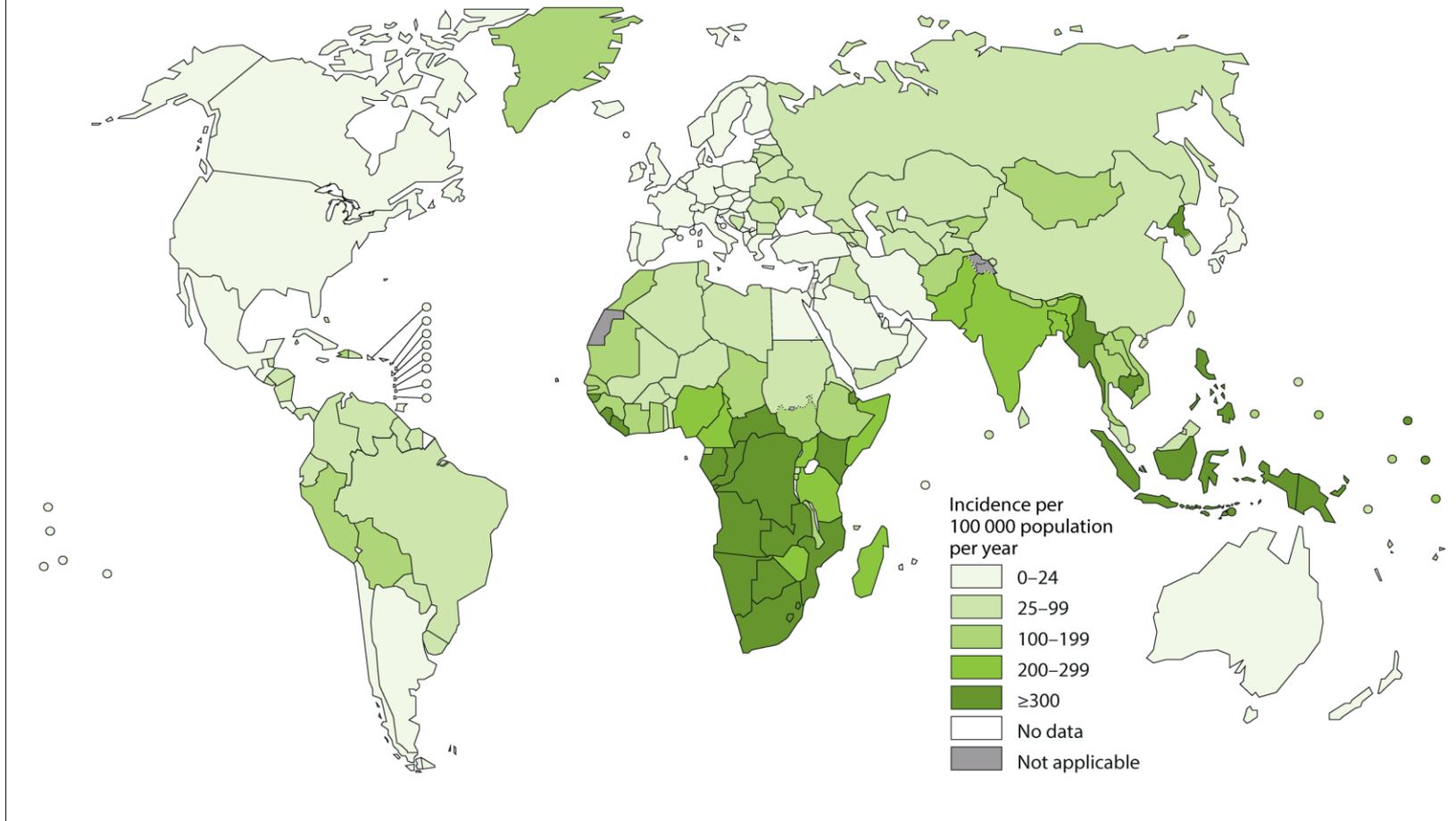


HIV



TB

Estimated TB incidence rates, 2016



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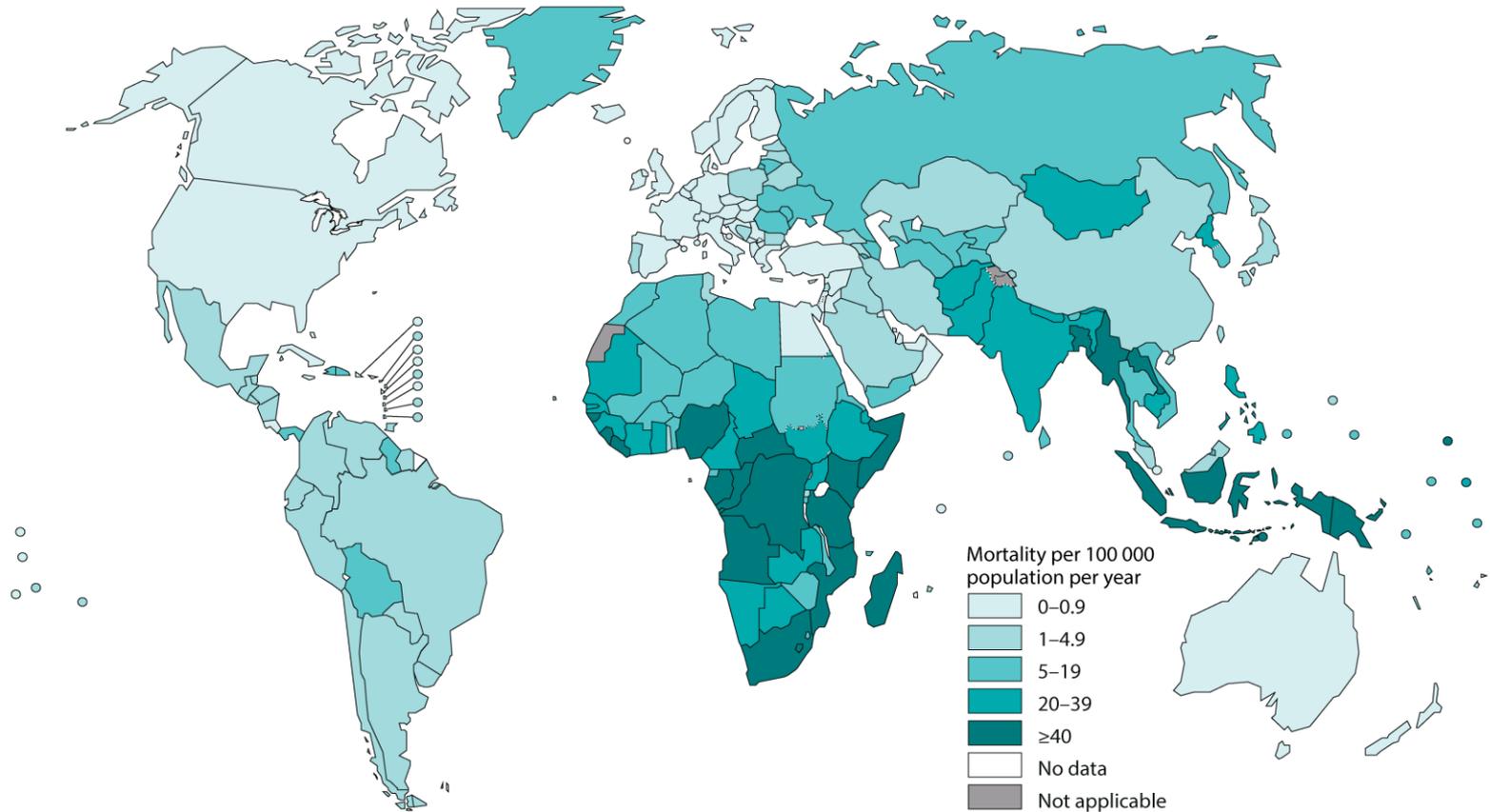
Data Source: *Global Tuberculosis Report 2017*. WHO, 2017.

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TB

Estimated TB mortality rates excluding TB deaths among HIV-positive people, 2016



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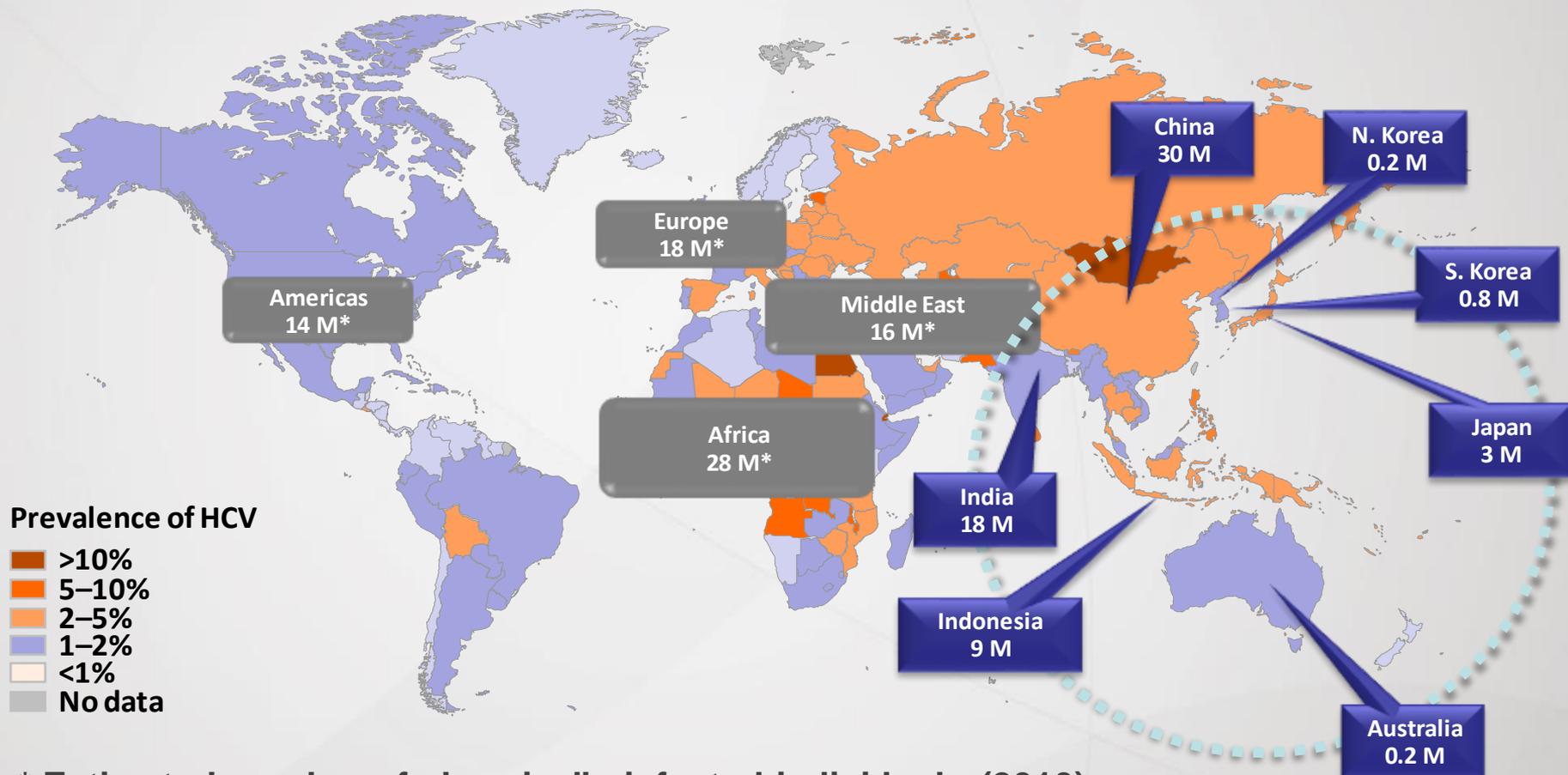
Data Source: *Global Tuberculosis Report 2017*. WHO, 2017.

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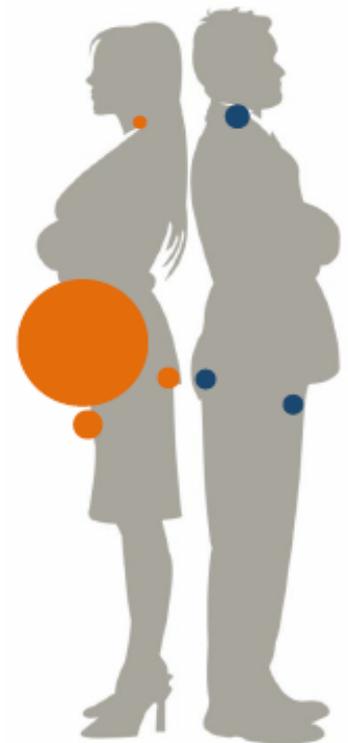
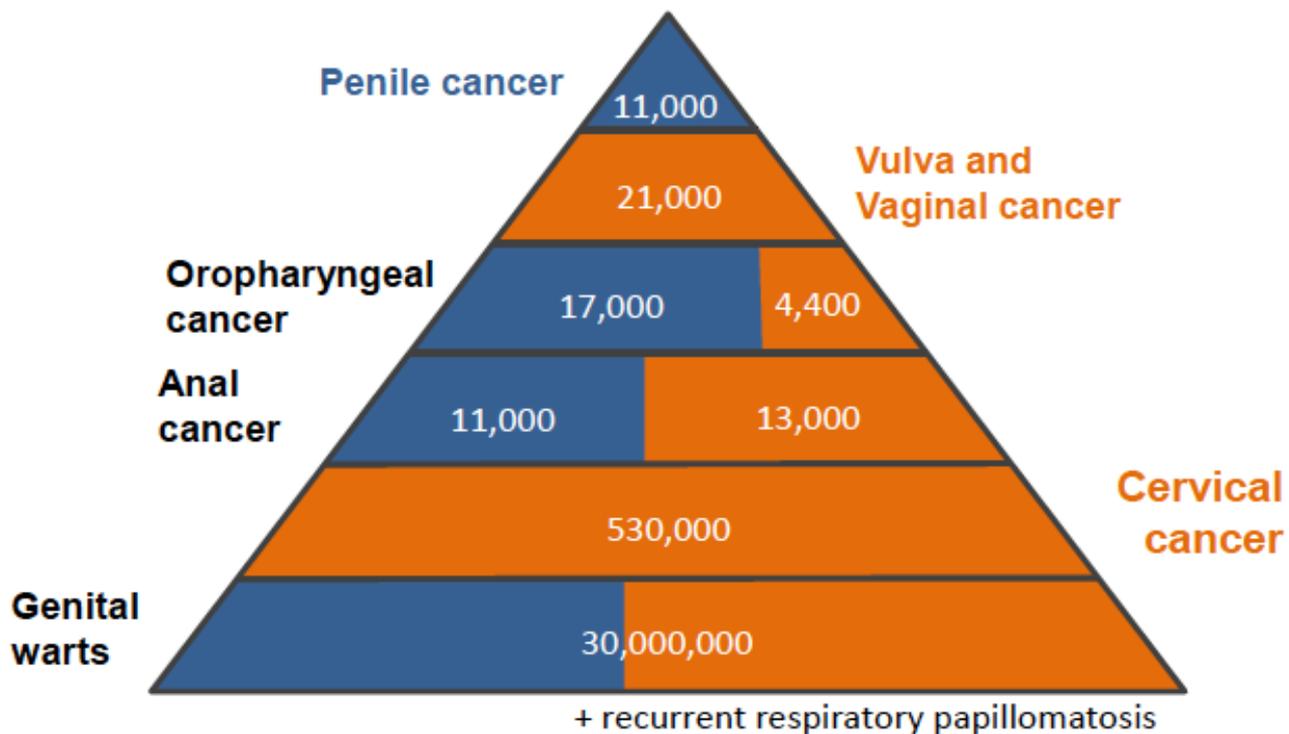
Prevalenza dell'infezione da HCV nel mondo

130–170 million people world wide are infected with HCV



* Estimated number of chronically infected individuals (2010)

2008 Global HPV-related burden: 607,000 annual cancer cases



*Circles proportional to annual burden

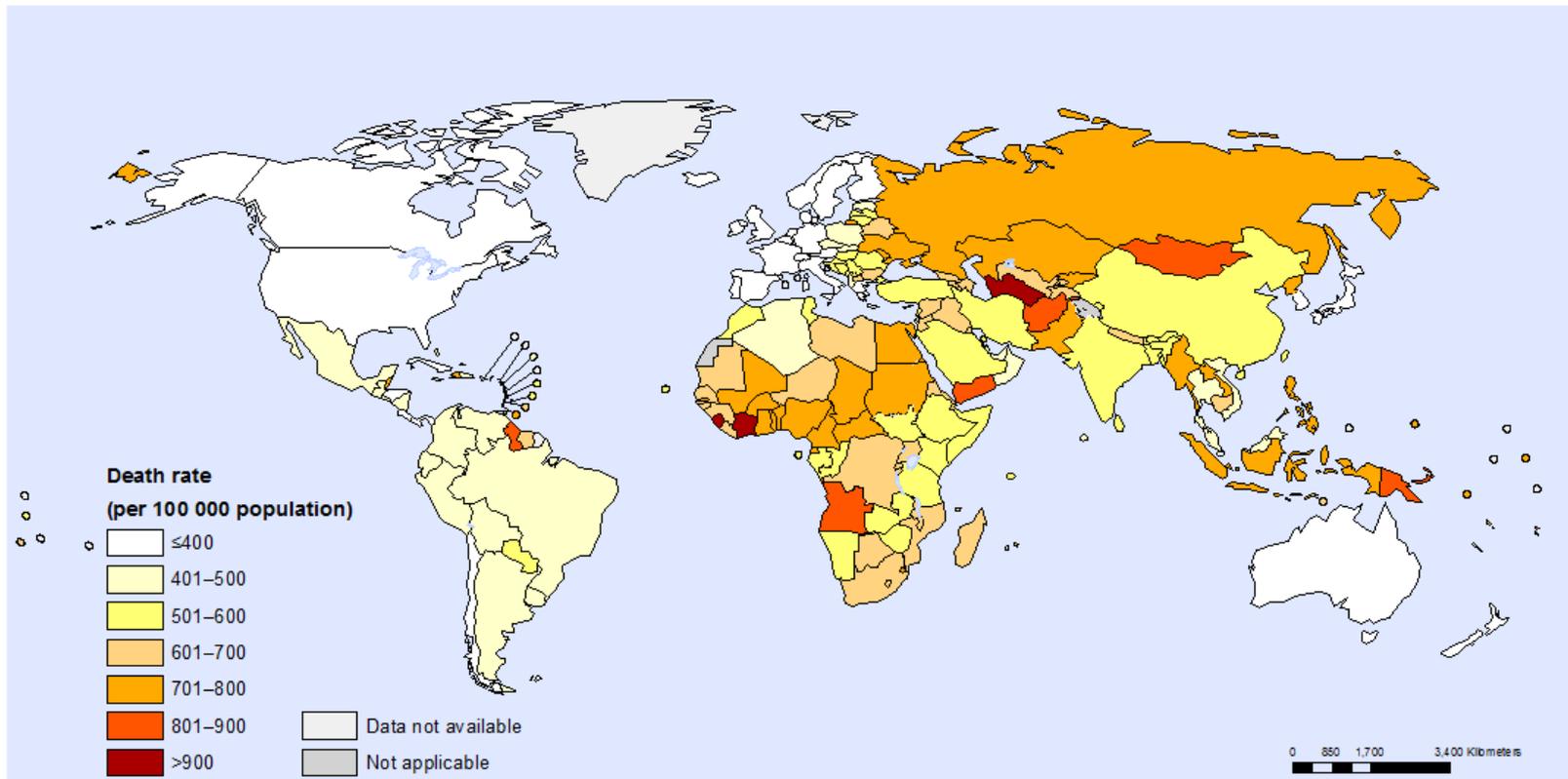
International Agency for Research on Cancer



De Martel et al. 2012 Lancet Oncol (cancers) and Dillner et al. 2010 BMJ (genital warts)

HEALTH

Deaths due to noncommunicable diseases: age-standardized death rate (per 100 000 population) Both sexes, 2015



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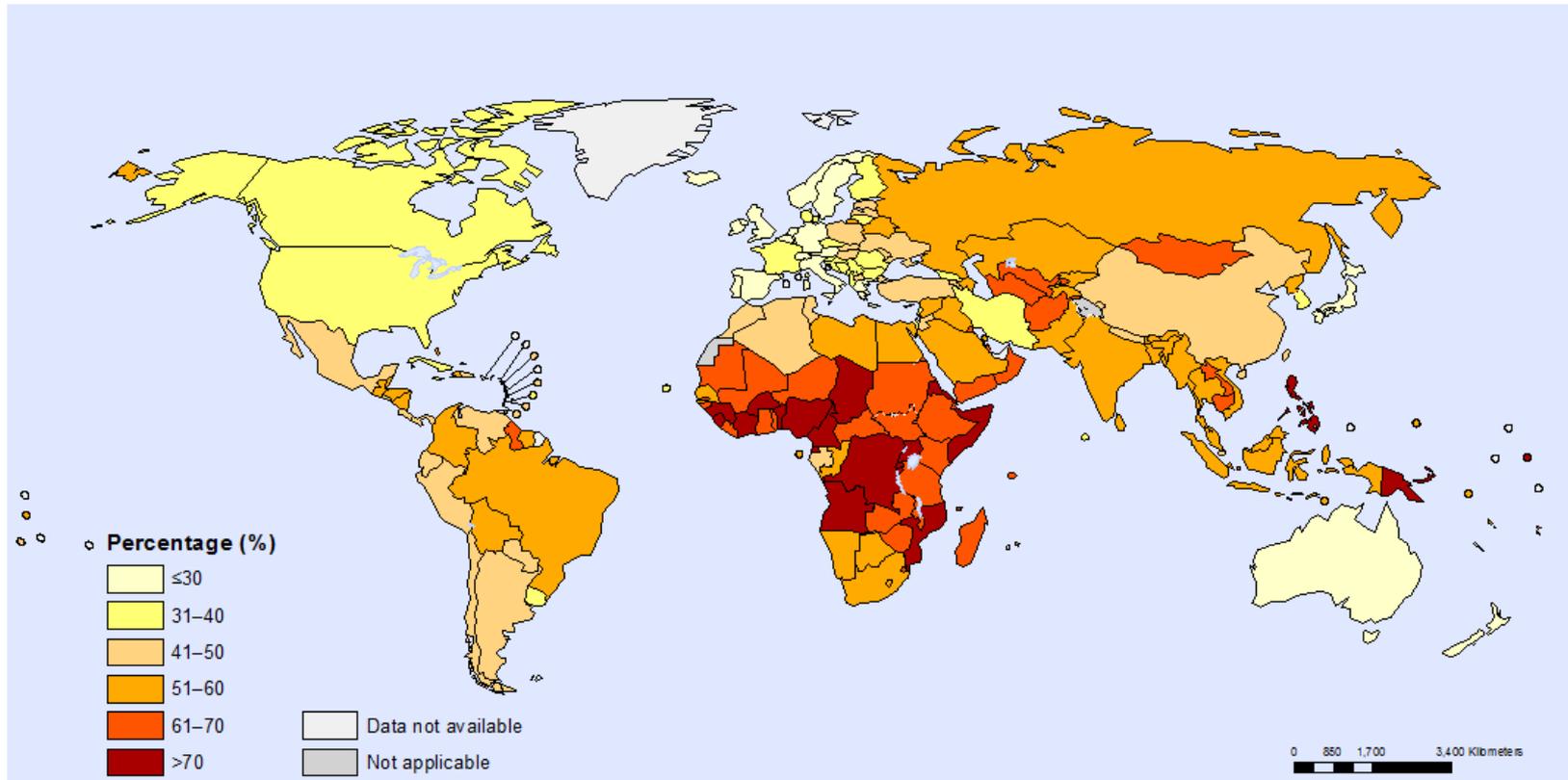
Data Source: World Health Organization
Map Production: Information Evidence and Research (IER)
World Health Organization



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HEALTH

Percentage of deaths due to noncommunicable diseases occurring under age of 70 Male, 2015



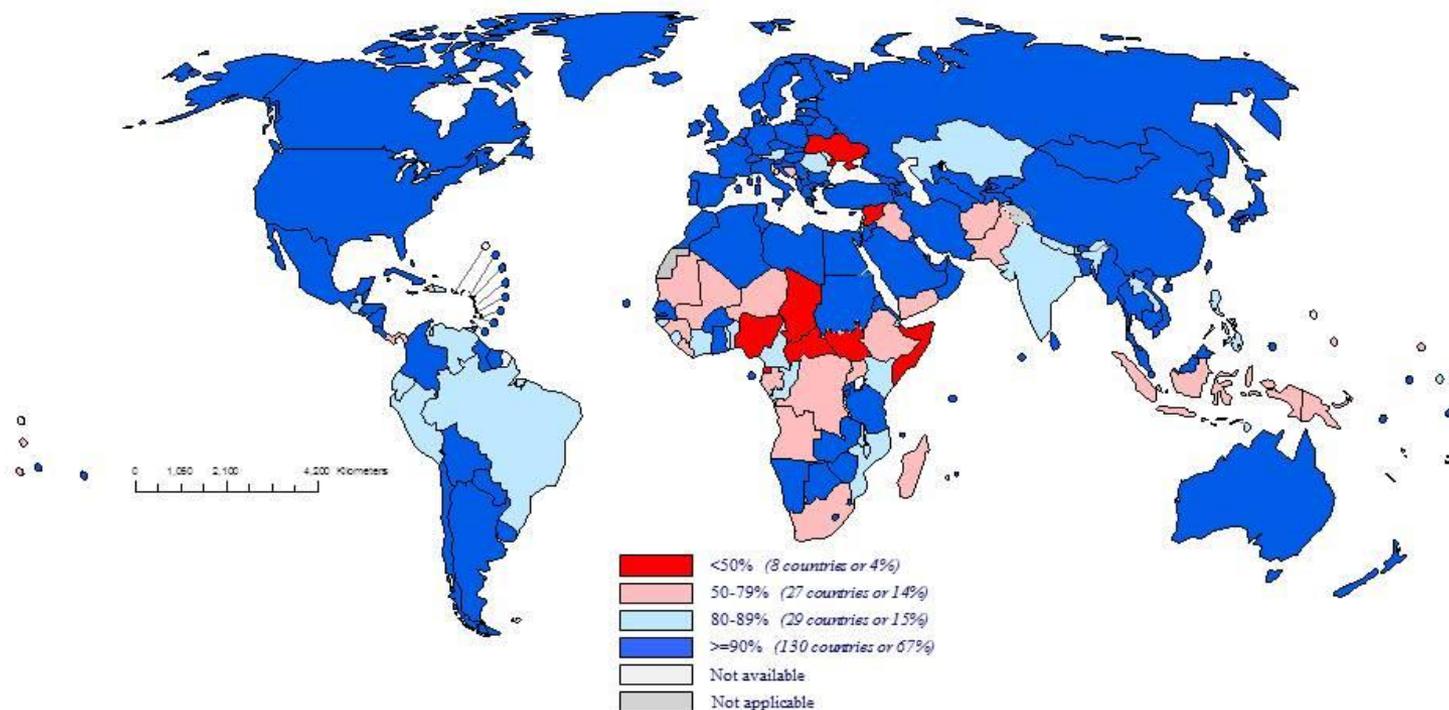
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Data Source: World Health Organization
Map Production: Information Evidence and Research (IER)
World Health Organization



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Immunization coverage with DTP3 vaccines in infants (from <50%), 2016



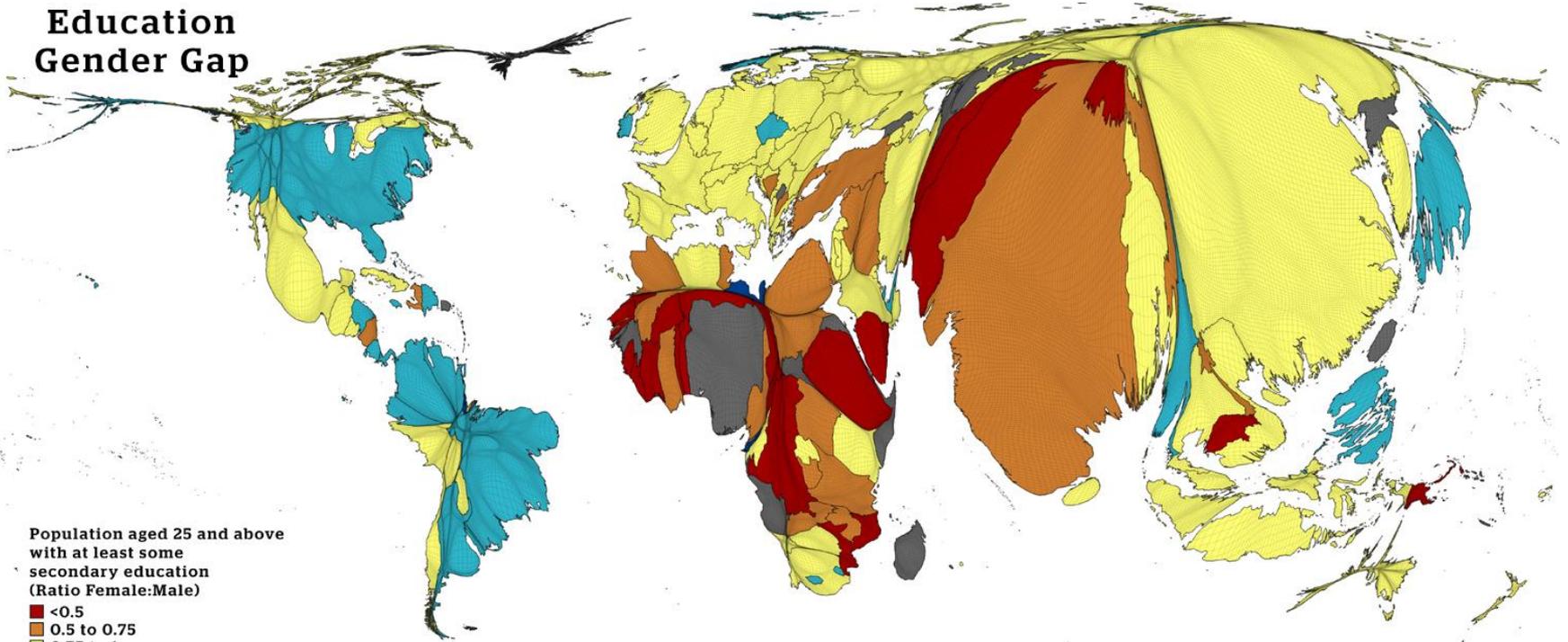
Source: WHO/UNICEF coverage estimates 2016 revision, July 2017.
 Map production: Immunization Vaccines and Biologicals, (IVB), World Health Organization, 194 WHO Member States.
 Date of slide: 19 July 2017

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EDUCATION

Education Gender Gap



Population aged 25 and above
with at least some
secondary education
(Ratio Female:Male)

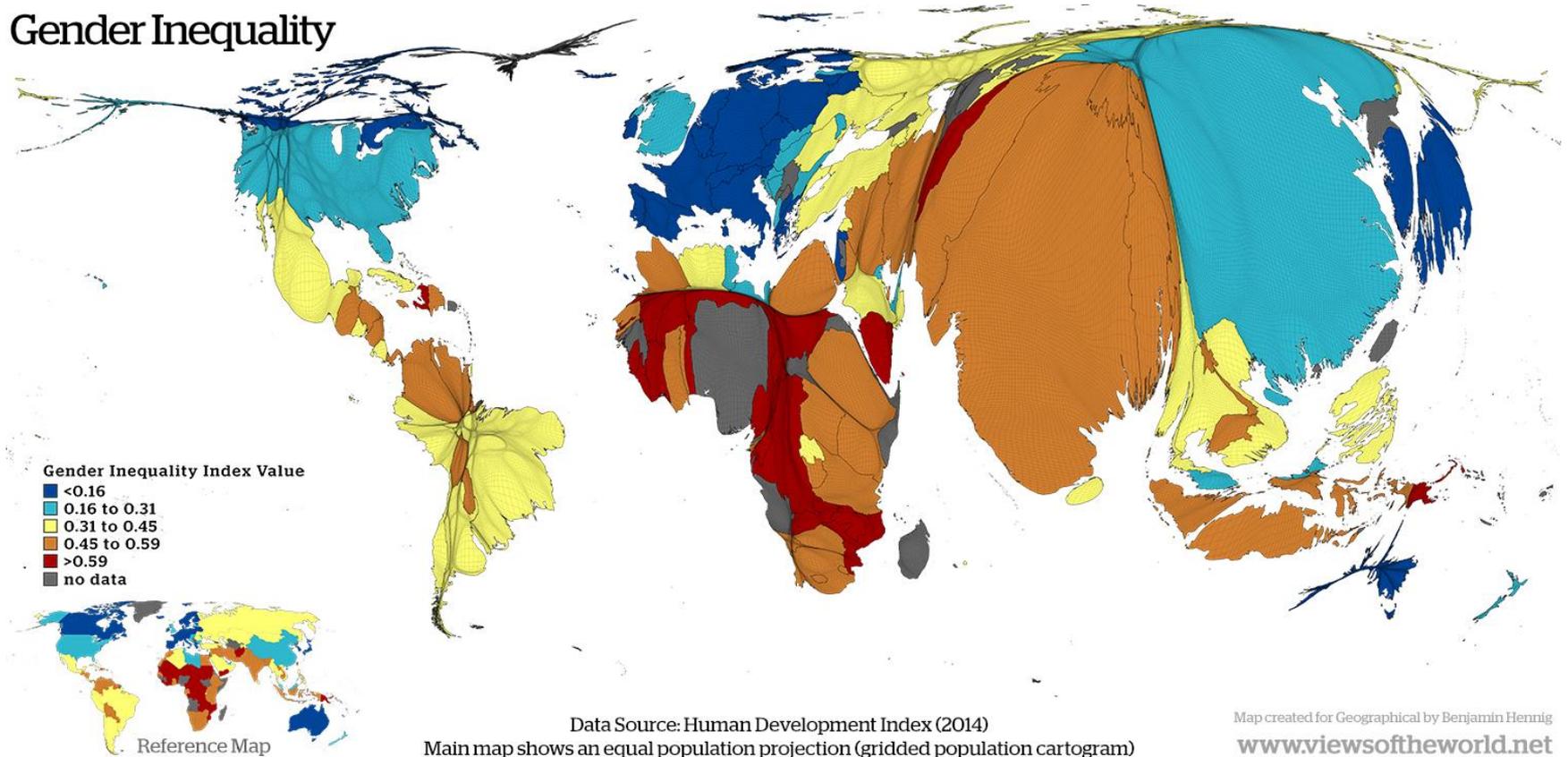
- <0.5
- 0.5 to 0.75
- 0.75 to 1
- 1 to 1.25
- >1.25
- no data

Basemap: Gridded population cartogram giving every person an equal amount of space in the map
Data Source: United Nations Human Development Report 2014

Map created by Benjamin Hennig
www.viewsoftheworld.net

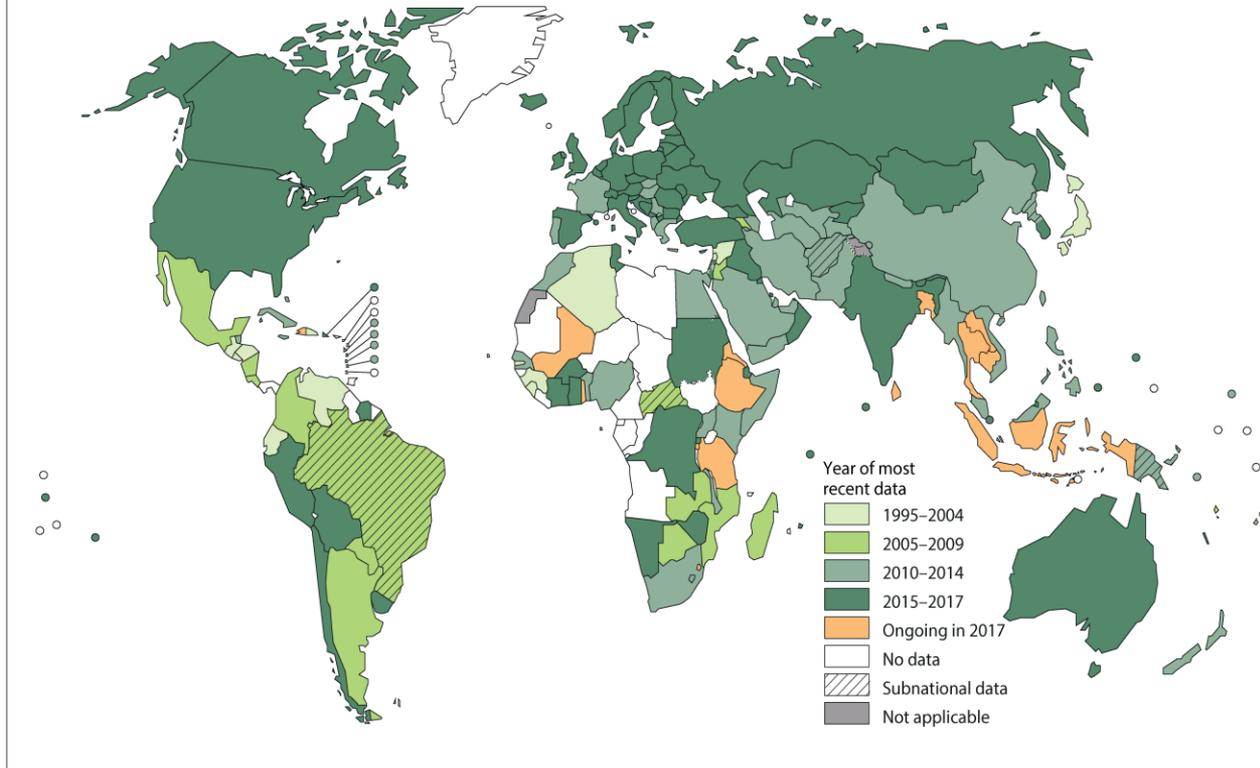
GENDER (IN-)EQUALITY

Gender Inequality



DRUG RESISTANCE

Global coverage of surveillance data on drug resistance, 1995–2017



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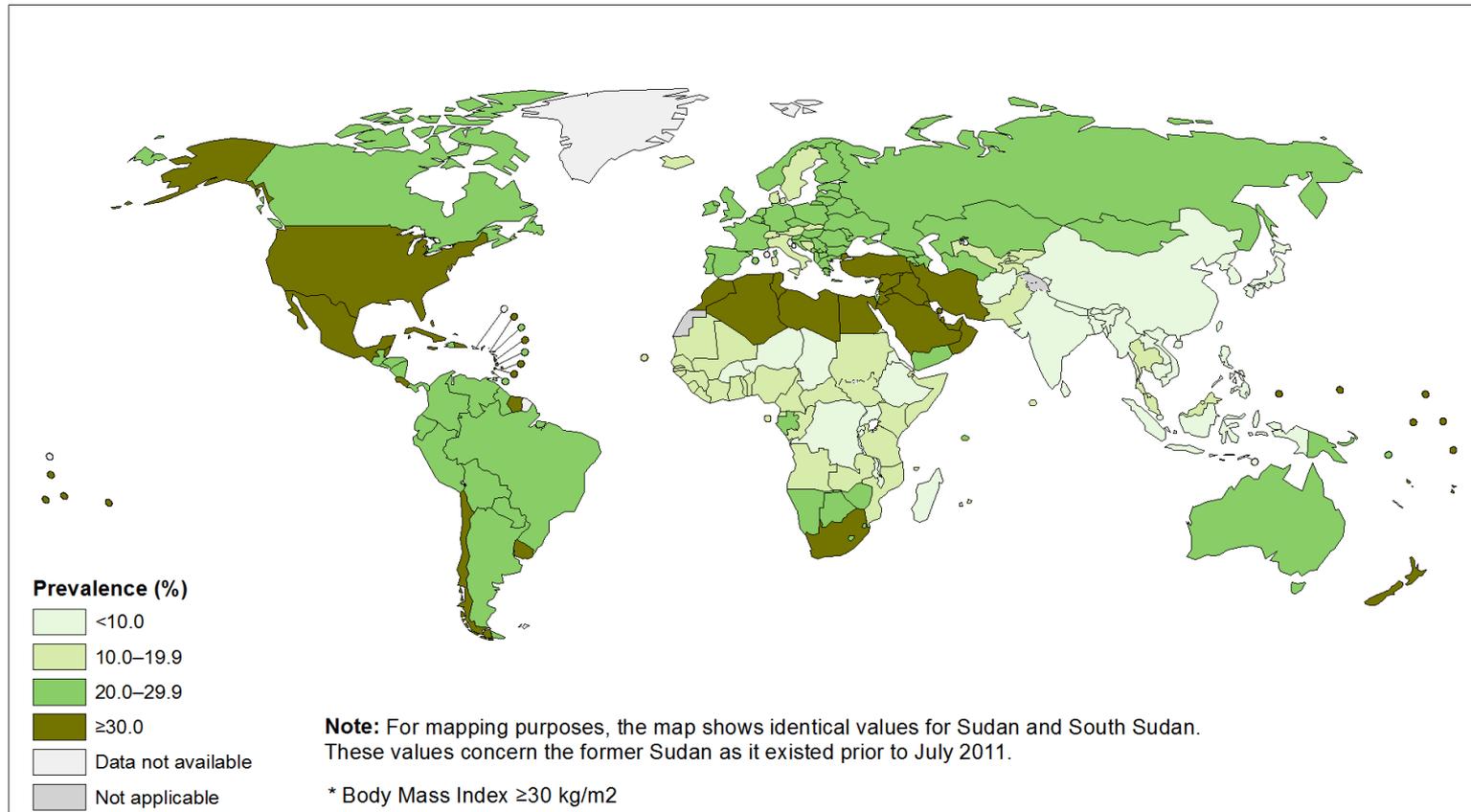
Data Source: *Global Tuberculosis Report 2017*. WHO, 2017.

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OBESITY / OVERWEIGHT

Prevalence of obesity*, ages 18+, 2016 (age standardized estimate)
Female



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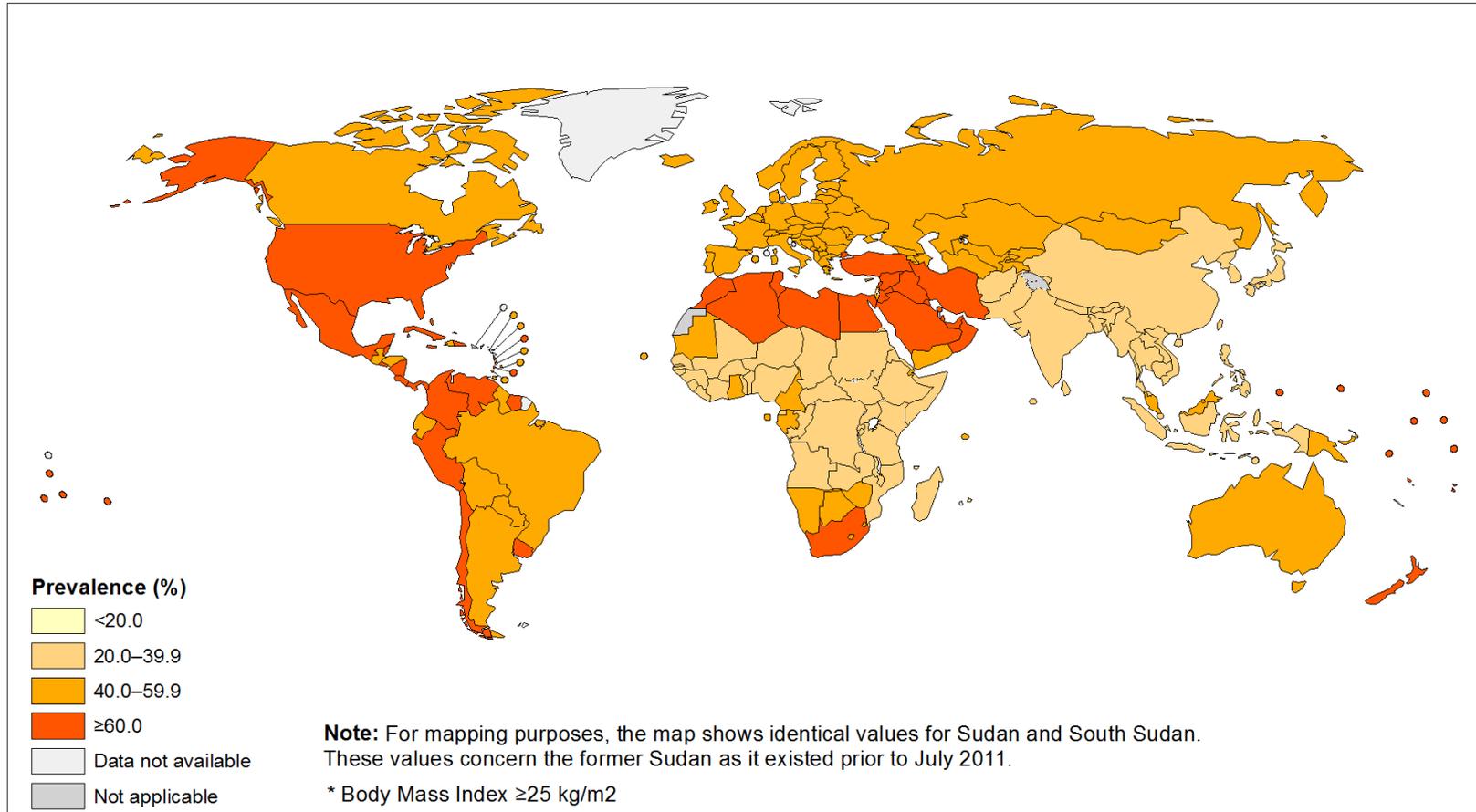
Data Source: World Health Organization
Map Production: Information Evidence and Research (IER)
World Health Organization



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OBESITY / OVERWEIGHT

Prevalence of overweight*, ages 18+, 2016 (age standardized estimate)
Female



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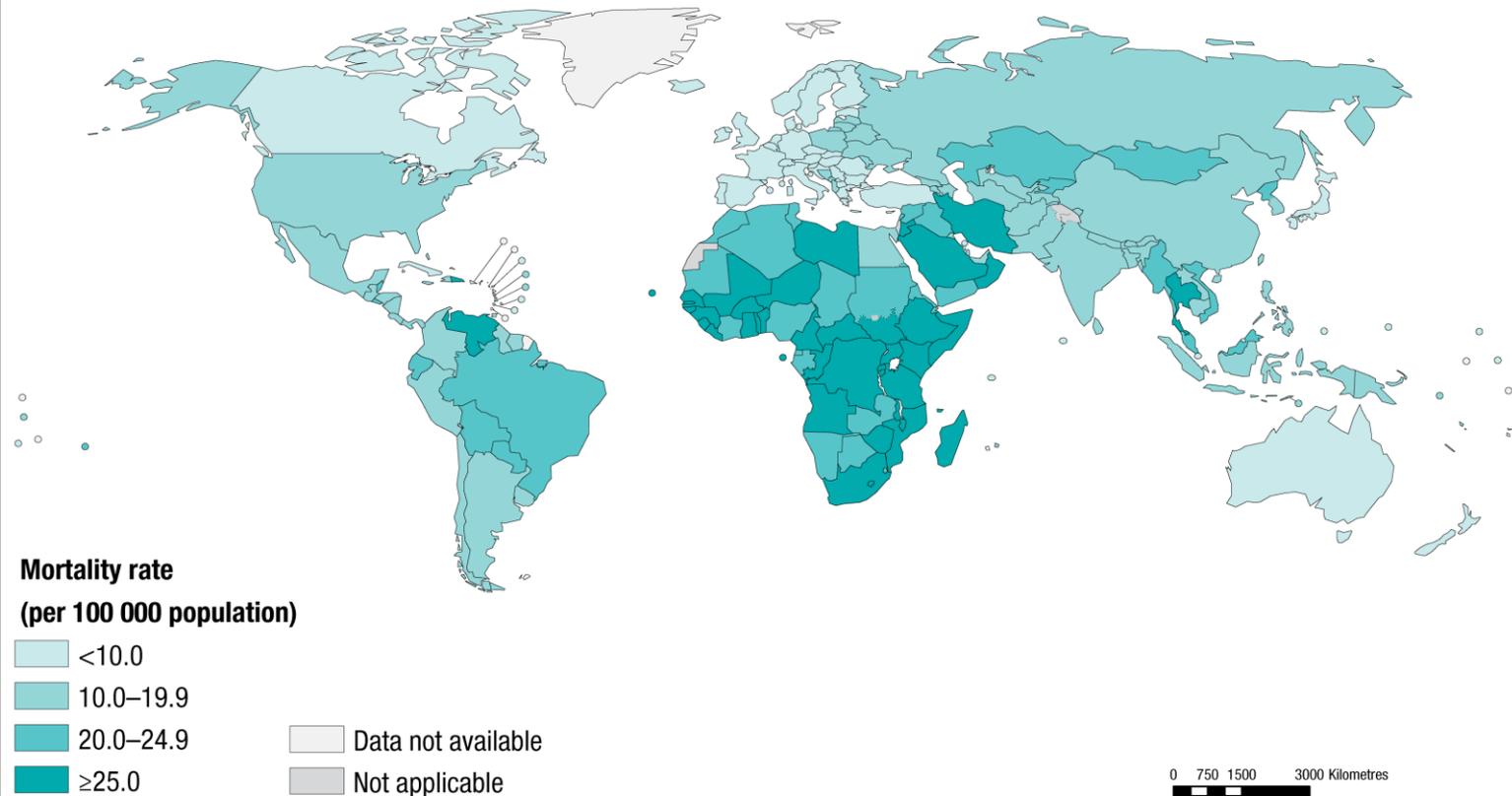
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ROAD TRAFFIC MORTALITY

Road traffic mortality rate, 2013*



* WHO Member States with a population of less than 90 000 in 2015 who did not participate in the survey for the Global status report on road safety 2015 were not included in the analysis.

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Data Source: World Health Organization
Map production: Information Evidence and Research (IER)
World Health Organization



What is Global Health ?

Global health is the health of populations in a global context

An area for study, research, and action

That prioritize improving health and achieving
equity in health for all people worldwide

Transcending the perspectives and concerns of
individual nations

With specific attention to the poor, the
marginalized, and the underserved....

Globalization, Poverty and Health

1. The current version of globalization has delivered economic growth
2. But at enormous cost: rising inequalities, massive environmental destruction, and growing lawlessness.
3. Poverty is both a cause and a consequence of poor health.
4. The causes of poor health for millions globally are rooted in political, social and economic injustices.

The causes of poor health for millions globally are rooted in political, social and economic injustices.



Only 1% of people owns 50.4% of the global wealth;
2.4 billion adults own only 1%

2015 Global Wealth Report Credit Suisse.

Marginalised groups and vulnerable individuals are often worst affected.



1.5 billion people live in slums



“Displaced populations”

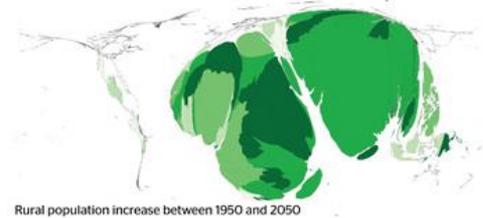
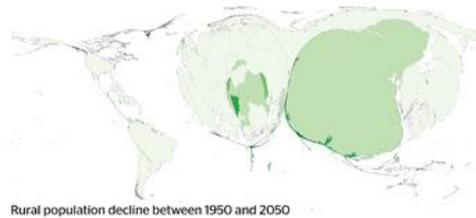
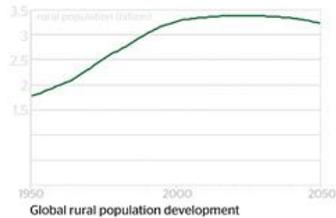
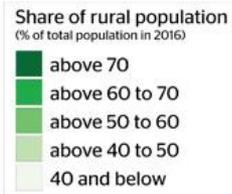
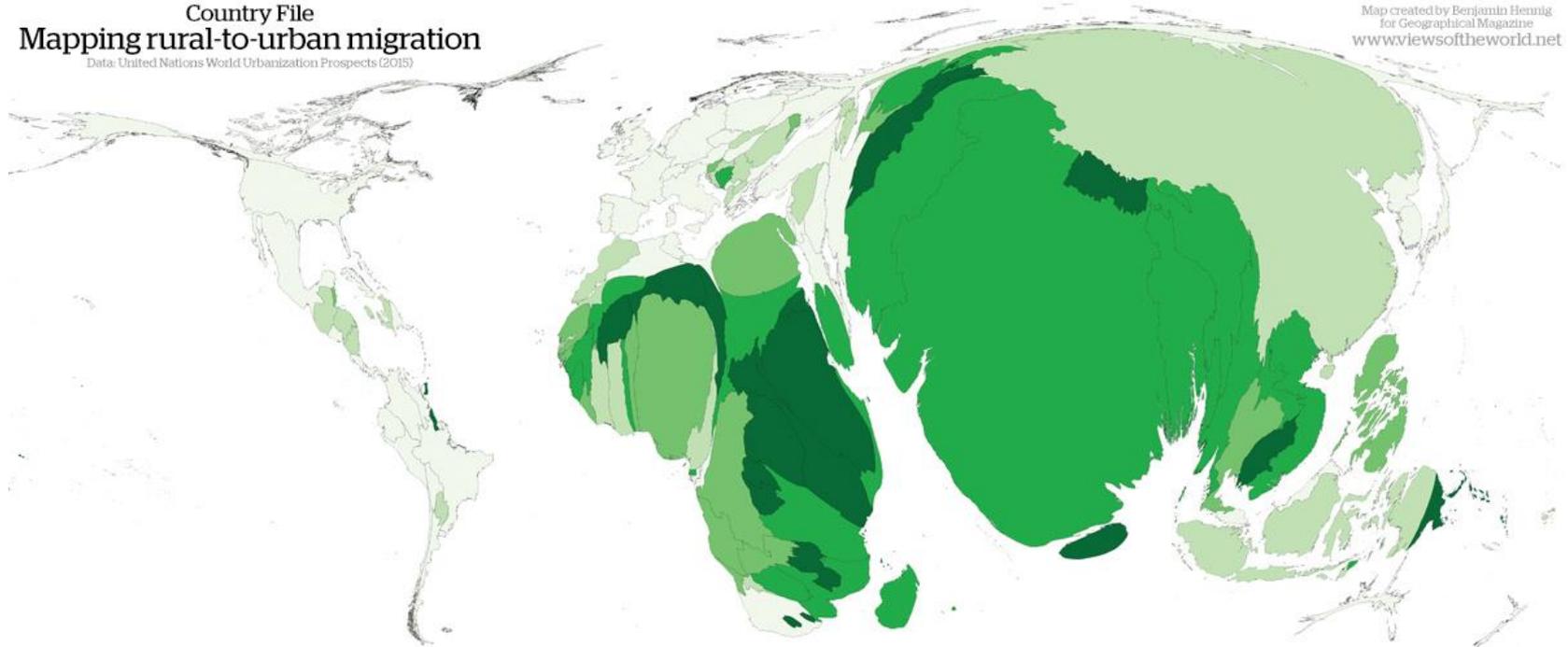




REFUGEES/MIGRATION

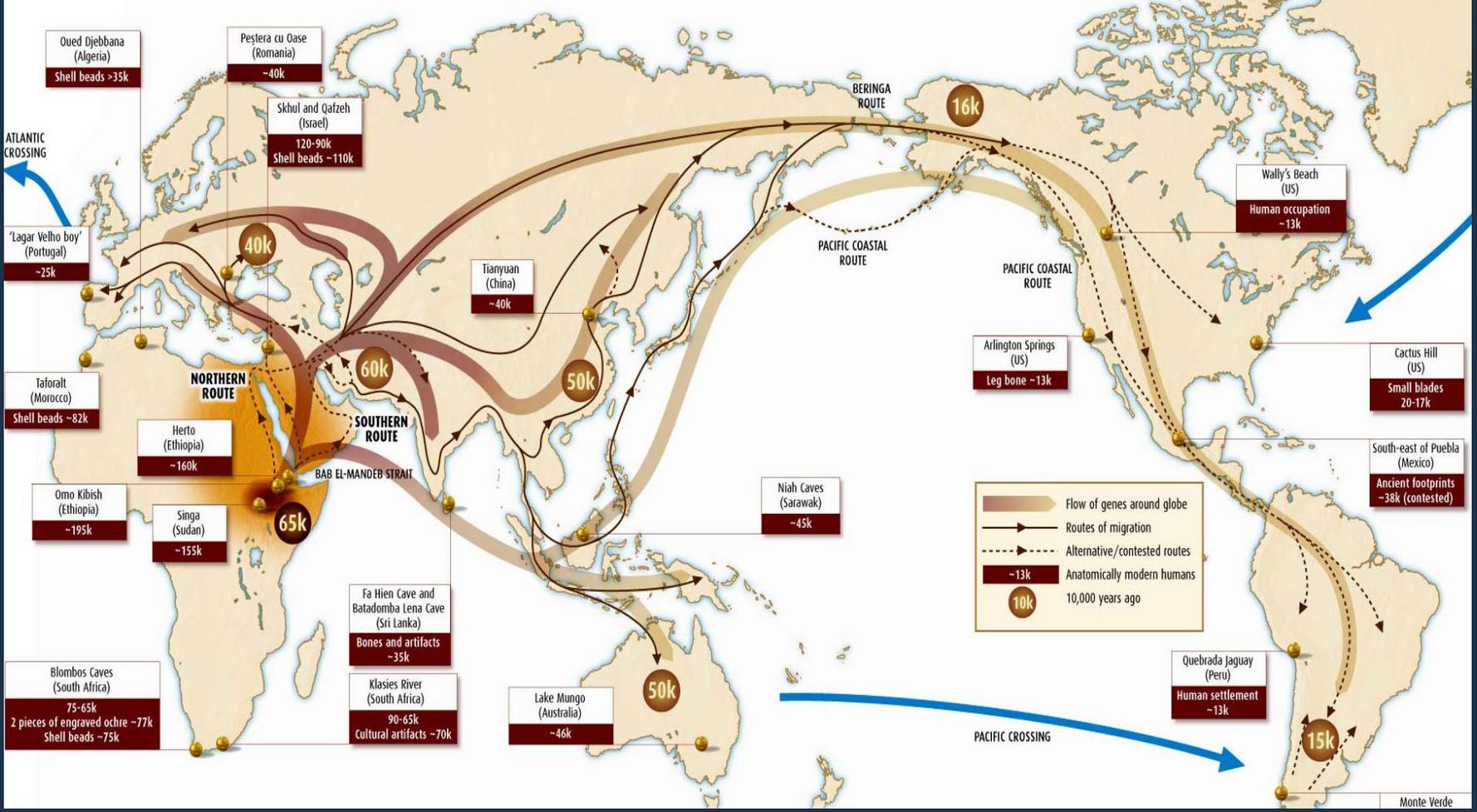
Country File
Mapping rural-to-urban migration
Data: United Nations World Urbanization Prospects (2015)

Map created by Benjamin Hennig
for Geographical Magazine
www.viewsoftheworld.net



THE MIGRATION OF ANATOMICALLY MODERN HUMANS

Evidence from fossils, ancient artefacts and genetic analyses combine to tell a compelling story



2. Investing in Health

Investing in Health is very cost-effective

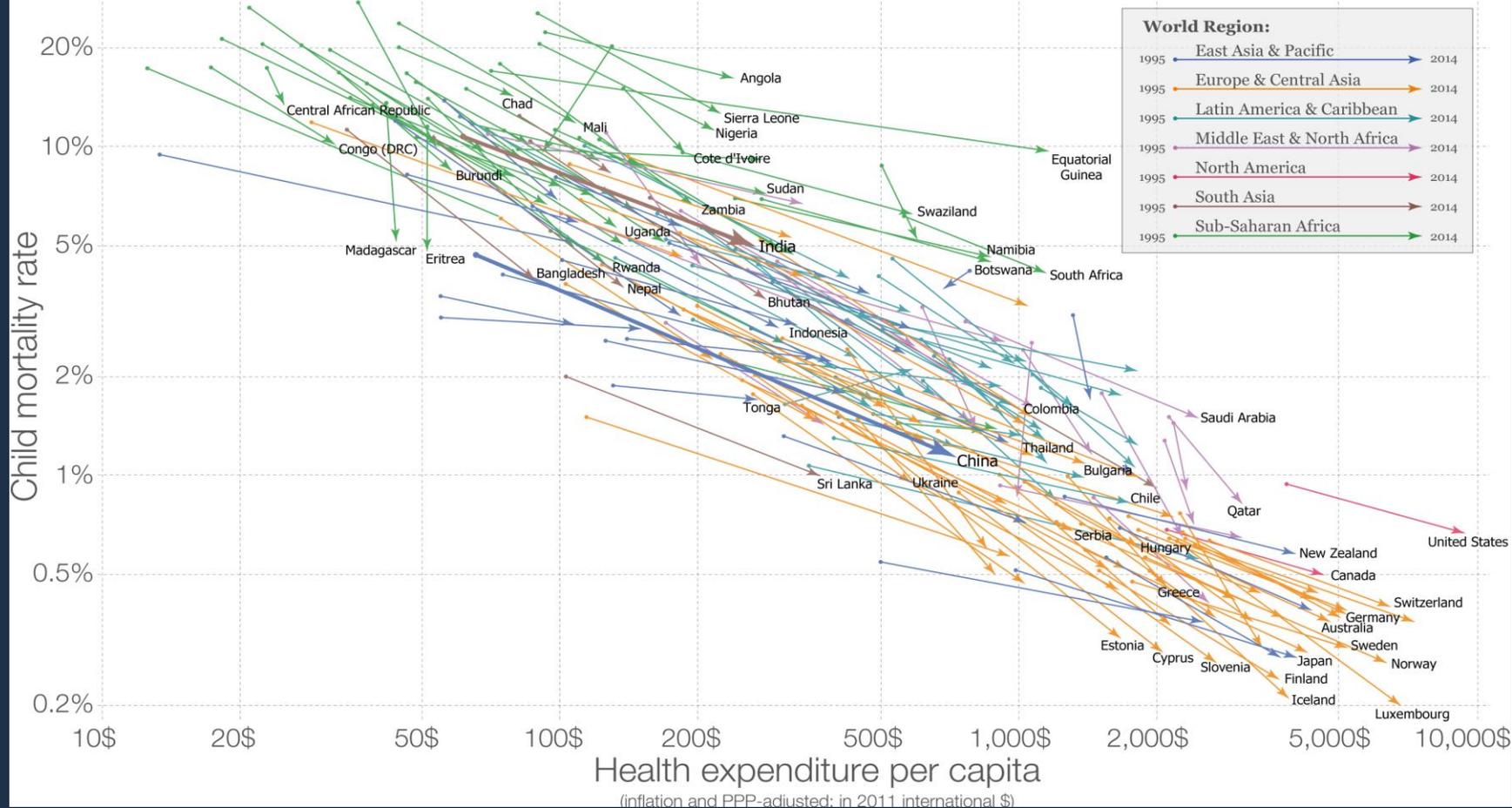
Fewer children die as more money is spent on health

Our World in Data

The arrows show the change for all countries in the world, from 1995 (earliest available data) to 2014 (latest available data). [Not all countries are labelled]

– Child mortality is the share of children that die before their 5th birthday.

– Total health expenditure is the sum of public and private health expenditures. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation.



The Challenge of Financing Global Health:

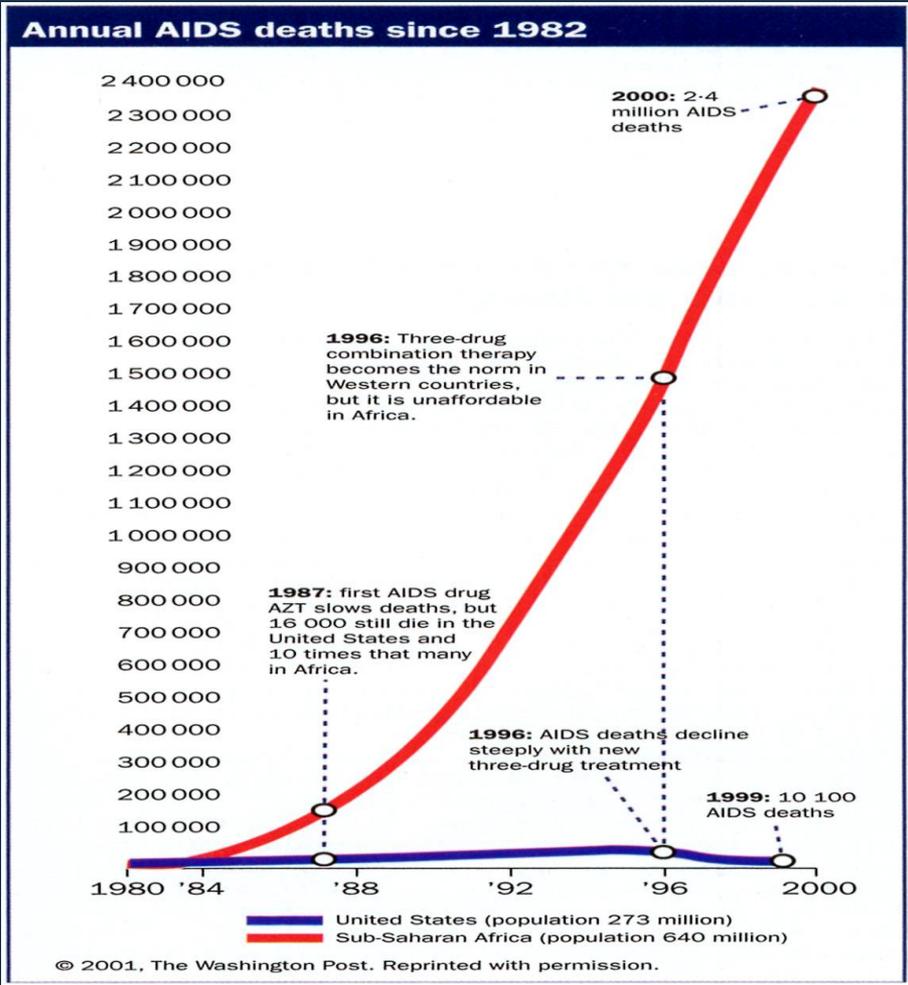
→ *competing with emerging new priorities*

financial crisis, conflict situations, migration,

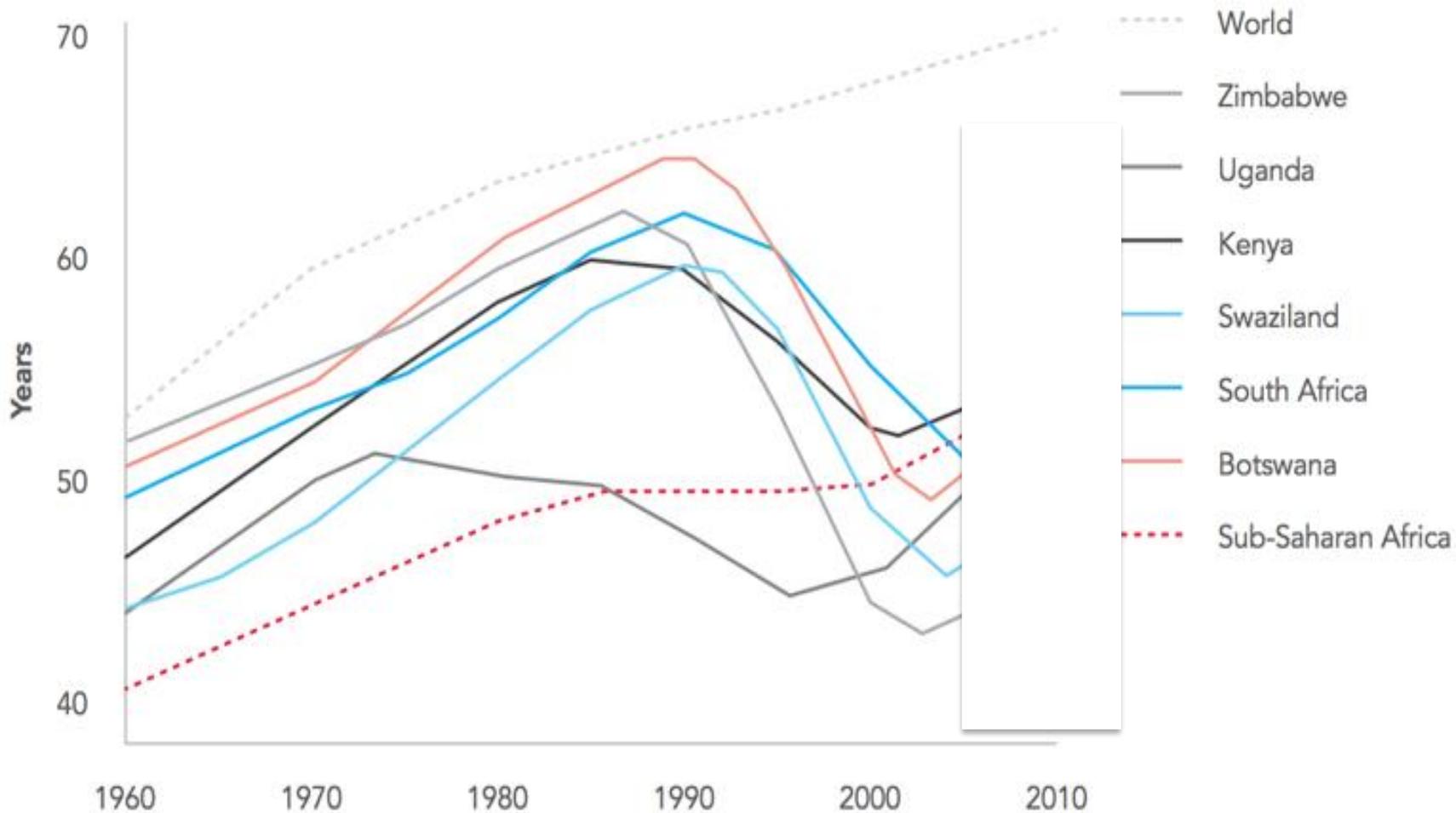
security, climate change,

natural and human-made disasters

YEAR 2000: difference in mortality between the rich and the poor

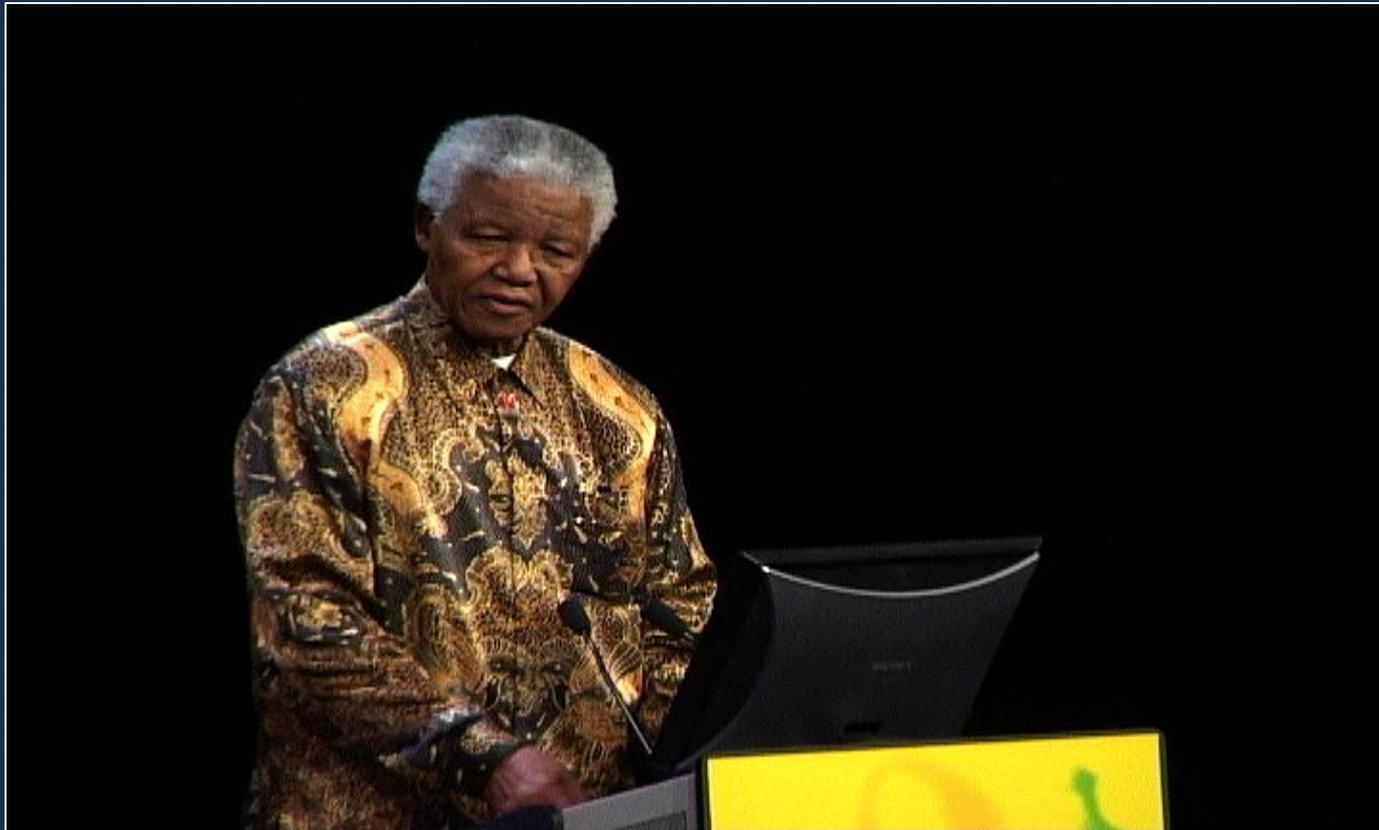


HIV/AIDS: life-expectancy impact





World AIDS Conference DURBAN, 2000



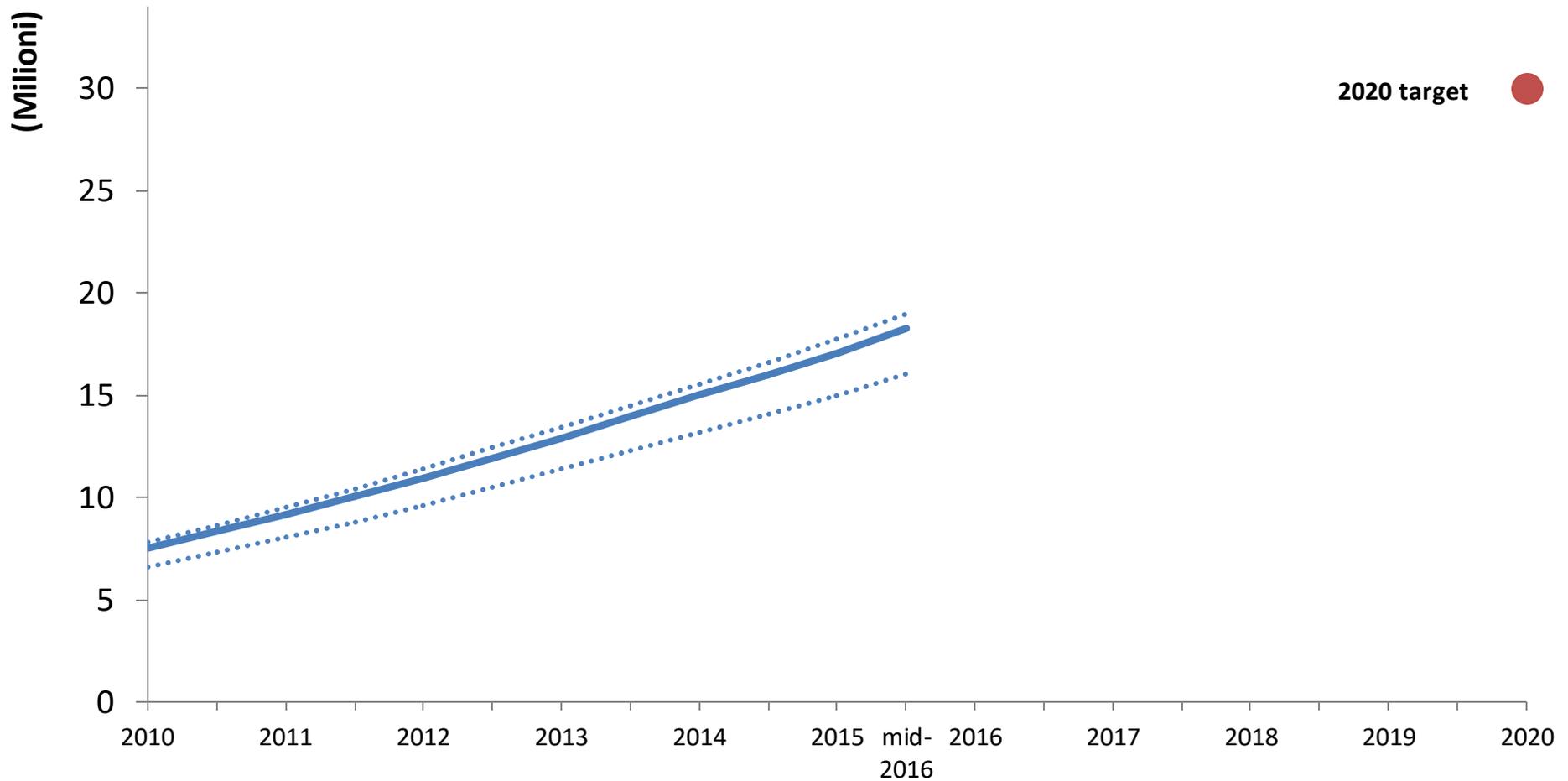
INNOVATIVE FINANCING TO FIGHT AIDS, TB & MALARIA



**ENDING AIDS,
TB AND MALARIA
AS EPIDEMICS**

 **The Global Fund**

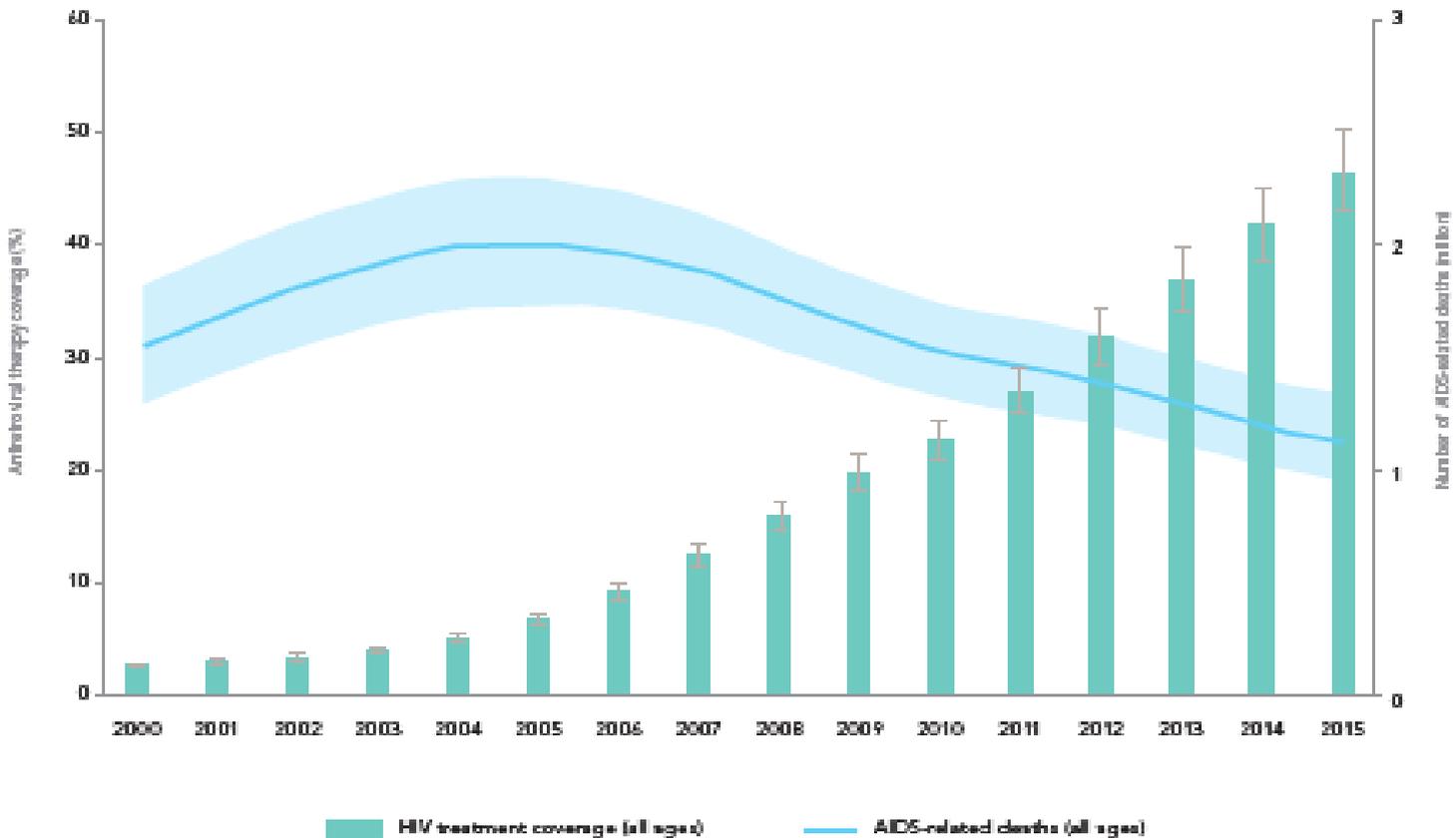
The rise of antiretroviral treatment coverage



Source: UNAIDS/WHO estimates.

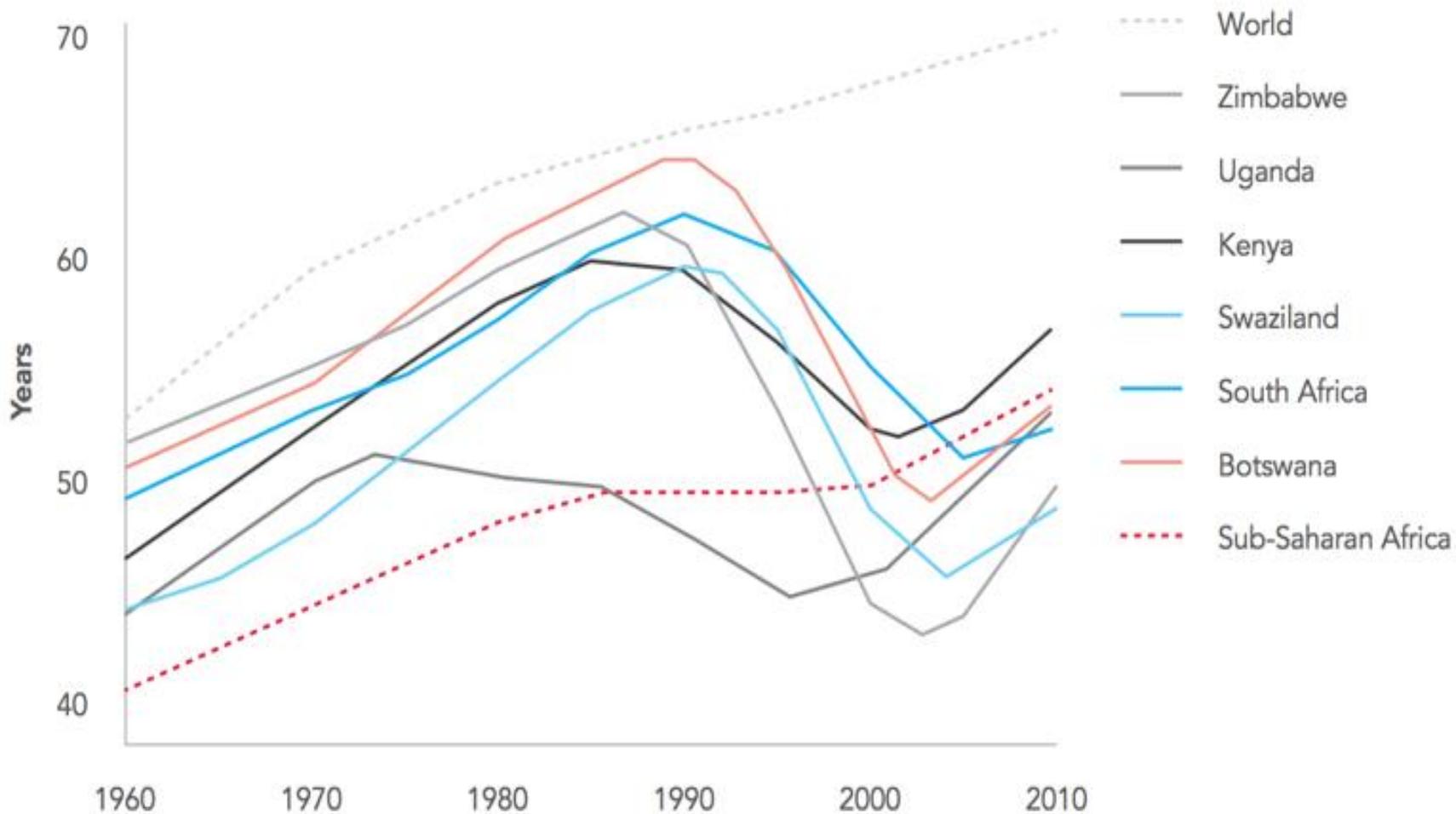
MORTALITY IMPACT

Antiretroviral therapy coverage and number of AIDS-related deaths, global, 2000–2015



Sources: GARPE 2015; UNAIDS 2016 estimates.

HIV/AIDS: life-expectancy impact

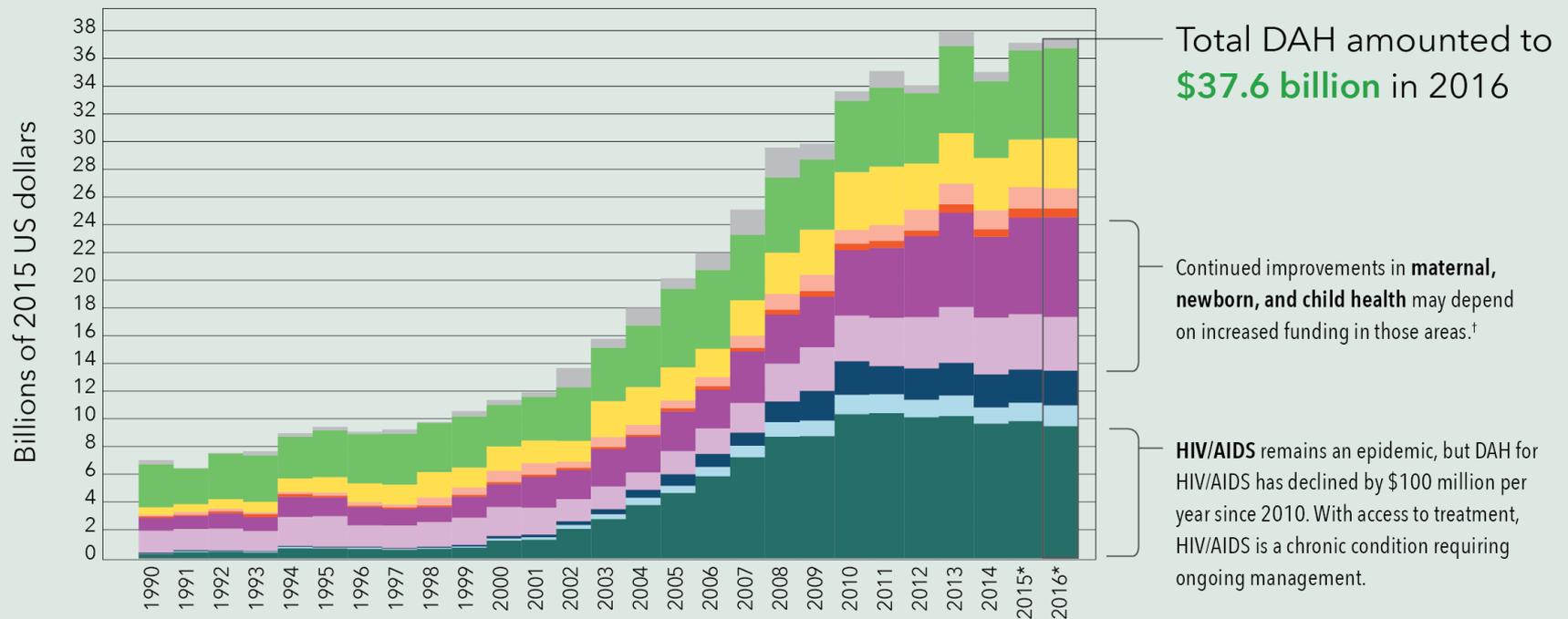


Source: World Bank life expectancy data

Development assistance for health (DAH)

Growth is stagnant, but the needs haven't gone away

DAH by health focus area, 1990-2016



- Unidentified
- Other
- Health system strengthening/
Sector-wide approaches
- Other infectious diseases
- Non-communicable diseases
- Newborn and child health
- Maternal health
- Malaria
- Tuberculosis
- HIV/AIDS

*2015 and 2016 are preliminary estimates.

[†]The majority of countries did not reach their goals for MDGs 4 and 5 (reducing child and maternal mortality).

Note: Health assistance for which we have no health focus area information is designated as "unidentified." "Other" captures DAH for which we have project-level information but which is not identified as funding any of the health focus areas tracked.

3. The Global Burden of Diseases



Institute for Health Metrics and Evaluation

<http://www.healthdata.org>

What is the Global Burden of Disease (GBD)?

Everyone, all over the world, deserves to live a long life in full health. The Global Burden of Disease study measures what prevents us from achieving that goal.

► The study identifies the biggest health problems in 195 countries and territories.

GBD includes

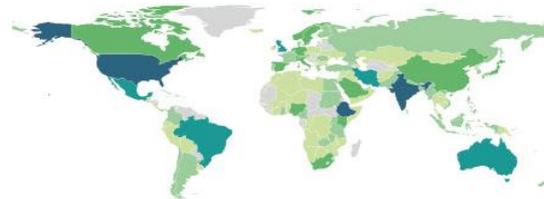


Q What questions can it answer?

- What are my country's biggest health problems?
- What causes more ill health in my country, depression or breast cancer?
- What contributes to more death and disability in my country - smoking, obesity/overweight, or unsafe water?
- What is the leading cause of death among children under the age of 5 in the world?
- I'm designing an intervention to improve the health of young women - which diseases, injuries, and risk factors should I target to make the greatest impact?
- Which countries have the highest death rates from drug use? Leukemia? Cardiovascular diseases?

GBD is a worldwide effort

Number of collaborators: 0 1-5 6-20 21-60 61-200 >200



Current contributors to the study



Published in *The Lancet*, the study uses more than **80,000 data sources**, drawing from the **world's largest global health database**. Governments in Australia, Brazil, Kenya, Norway, the UK, and the US, as well as the Bill & Melinda Gates Foundation and the World Bank, are using GBD findings to inform decision-making.

Global, regional, and national disability-adjusted life-years (DALYs) for 315 diseases and injuries and healthy life expectancy (HALE), 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015



GBD 2015 DALYs and HALE Collaborators*



Summary

Background Healthy life expectancy (HALE) and disability-adjusted life-years (DALYs) provide summary measures of health across geographies and time that can inform assessments of epidemiological patterns and health system performance, help to prioritise investments in research and development, and monitor progress toward the Sustainable Development Goals (SDGs). We aimed to provide updated HALE and DALYs for geographies worldwide and evaluate how disease burden changes with development.

Methods We used results from the Global Burden of Diseases, Injuries, and Risk Factors Study 2015 (GBD 2015) for all-cause mortality, cause-specific mortality, and non-fatal disease burden to derive HALE and DALYs by sex for 195 countries and territories from 1990 to 2015. We calculated DALYs by summing years of life lost (YLLs) and years of life lived with disability (YLDs) for each geography, age group, sex, and year. We estimated HALE using the Sullivan method, which draws from age-specific death rates and YLDs per capita. We then assessed how observed levels of DALYs and HALE differed from expected trends calculated with the Socio-demographic Index (SDI), a composite indicator constructed from measures of income per capita, average years of schooling, and total fertility rate.

Findings Total global DALYs remained largely unchanged from 1990 to 2015, with decreases in communicable, neonatal, maternal, and nutritional (Group 1) disease DALYs offset by increased DALYs due to non-communicable diseases (NCDs). Much of this epidemiological transition was caused by changes in population growth and ageing, but it was accelerated by widespread improvements in SDI that also correlated strongly with the increasing importance of NCDs. Both total DALYs and age-standardised DALY rates due to most Group 1 causes significantly decreased by 2015, and although total burden climbed for the majority of NCDs, age-standardised DALY rates due to NCDs declined. Nonetheless, age-standardised DALY rates due to several high-burden NCDs (including osteoarthritis, drug use disorders, depression, diabetes, congenital birth defects, and skin, oral, and sense organ diseases) either increased or remained unchanged, leading to increases in their relative ranking in many geographies. From 2005 to 2015, HALE at birth increased by an average of 2.9 years (95% uncertainty interval 2.9–3.0) for men and 3.5 years (3.4–3.7) for women, while HALE at age 65 years improved by 0.85 years (0.78–0.92) and 1.2 years (1.1–1.3), respectively. Rising SDI was associated with consistently higher HALE and a somewhat smaller proportion of life spent with functional health loss; however, rising SDI was related to increases in total disability. Many countries and territories in central America and eastern sub-Saharan Africa had increasingly lower rates of disease burden than expected given their SDI. At the same time, a subset of geographies recorded a growing gap between observed and expected levels of DALYs, a trend driven mainly by rising burden due to war, interpersonal violence, and various NCDs.

Interpretation Health is improving globally, but this means more populations are spending more time with functional health loss, an absolute expansion of morbidity. The proportion of life spent in ill health decreases somewhat with increasing SDI, a relative compression of morbidity, which supports continued efforts to elevate personal income, improve education, and limit fertility. Our analysis of DALYs and HALE and their relationship to SDI represents a robust framework on which to benchmark geography-specific health performance and SDG progress. Country-specific drivers of disease burden, particularly for causes with higher-than-expected DALYs, should inform financial and research investments, prevention efforts, health policies, and health system improvement initiatives for all countries along the development continuum.

Funding Bill & Melinda Gates Foundation.

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Lancet 2016; 388: 1603–58
This online publication has been corrected. The corrected version first appeared at thelancet.com on January 5, 2017.

See Editorial page 1447

See Comment page 1448 and 1450

*Collaborators listed at the end of the Article

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Seattle, WA 98122, USA
cjm@u.w.edu

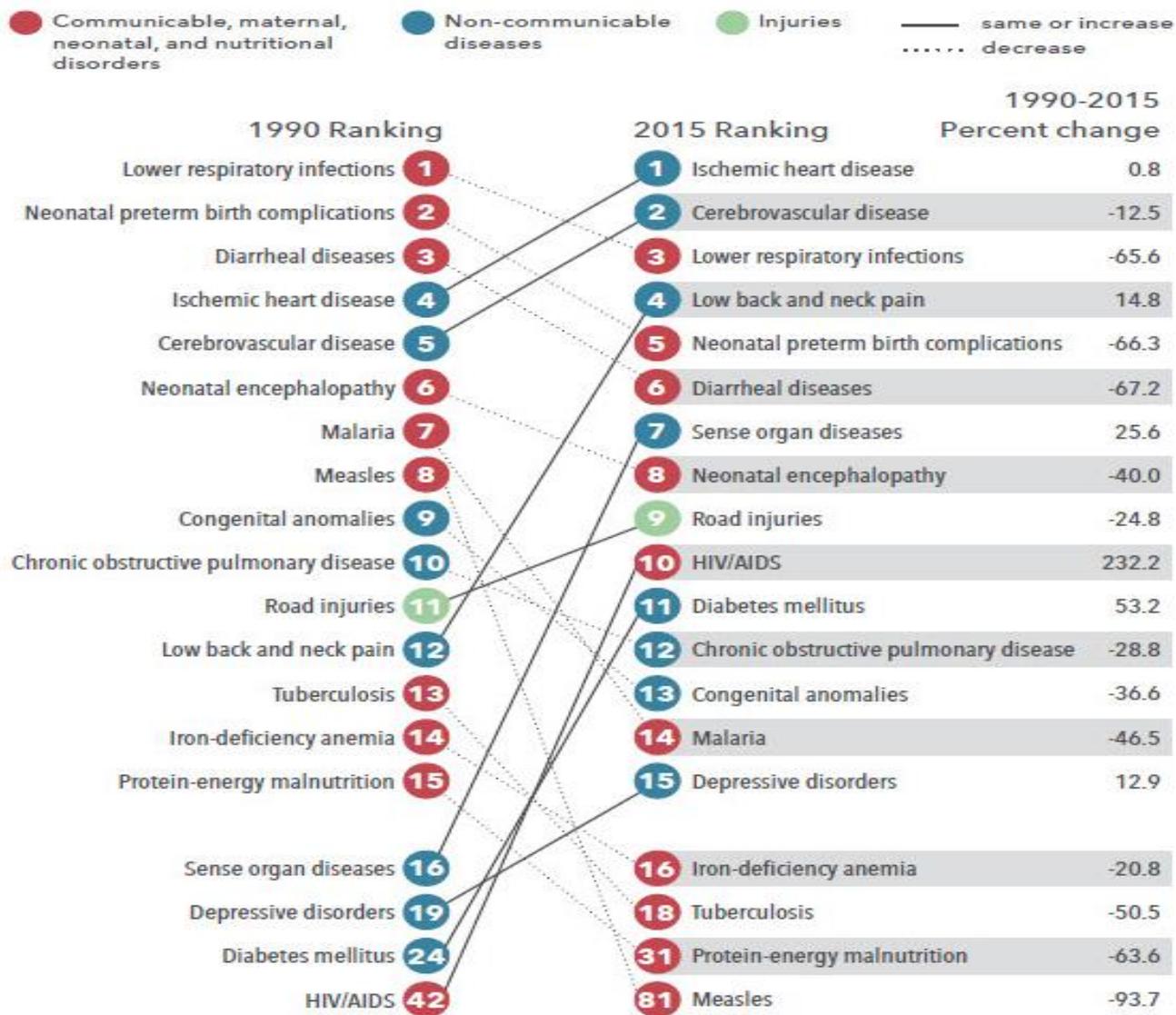
Figure 2

Leading causes 1990	Leading causes 2005	% change, number of DALYs 1990-2005	% change, all-age DALY rate 1990-2005	% change, age-standardised DALY rate 1990-2005	Leading causes 2015	% change, number of DALYs 2005-15	% change, all-age DALY rate 2005-15	% change, age-standardised DALY rate 2005-15
1 Lower respiratory infection	1 Ischaemic heart disease	26.3	2.7	-12.2	1 Ischaemic heart disease	11.0	-1.8	-14.2
2 Neonatal preterm birth	2 Lower respiratory infection	-37.2	-49.0	-37.5	2 Cerebrovascular disease	0.1	-11.3	-22.2
3 Diarrhoeal diseases	3 Cerebrovascular disease	21.6	-1.0	-13.0	3 Lower respiratory infection	-23.8	-32.6	-31.0
4 Ischaemic heart disease	4 Neonatal preterm birth	-37.9	-49.4	-36.1	4 Low back and neck pain	18.6	4.9	-2.1
5 Cerebrovascular disease	5 HIV/AIDS	584.8	445.2	446.8	5 Neonatal preterm birth	-24.4	-33.1	-28.6
6 Neonatal encephalopathy	6 Diarrhoeal diseases	-37.3	-49.0	-39.3	6 Diarrhoeal diseases	-27.2	-35.7	-34.0
7 Malaria	7 Malaria	20.7	-1.4	18.3	7 Sense organ diseases	25.2	9.9	0.6
8 Measles	8 Low back and neck pain	34.5	9.4	-1.8	8 Neonatal encephalopathy	-14.6	-24.2	-19.2
9 Congenital anomalies	9 Neonatal encephalopathy	-2.4	-20.4	0.3	9 Road injuries	-6.5	-17.1	-17.6
10 COPD	10 Road injuries	11.8	-9.0	-7.9	10 HIV/AIDS	-32.6	-40.4	-40.3
11 Road injuries	11 COPD	-1.1	-19.6	-27.7	11 Diabetes	29.0	14.6	1.6
12 Low back and neck pain	12 Congenital anomalies	-13.1	-28.3	-13.4	12 COPD	0.1	-11.5	-22.1
13 Tuberculosis	13 Sense organ diseases	39.4	11.7	2.1	13 Congenital anomalies	1.3	-9.4	-5.5
14 Iron-deficiency anaemia	14 Iron-deficiency anaemia	13.8	-10.0	-1.3	14 Malaria	-38.3	-45.0	-43.1
15 Protein-energy malnutrition	15 Tuberculosis	-15.0	-30.5	-35.8	15 Depressive disorders	18.2	4.5	1.0
16 Sense organ diseases	16 Diabetes	65.1	34.4	18.3	16 Iron-deficiency anaemia	-3.3	-17.2	-11.3
17 Drowning	17 Depressive disorders	32.9	8.1	0.6	17 Skin diseases	12.3	-0.7	0.6
18 Meningitis	18 Skin diseases	22.7	-0.2	1.2	18 Tuberculosis	-19.0	-28.2	-32.4
19 Depressive disorders	19 Self-harm	14.8	-6.8	-10.9	19 Lung cancer	14.5	1.1	-11.3
20 Skin diseases	20 Lung cancer	31.7	7.4	-6.1	20 Chronic kidney disease	19.6	4.8	-3.0
21 Self-harm	21 Neonatal sepsis	7.0	-12.9	10.5	21 Self-harm	-4.4	-15.4	-17.0
22 Other neonatal	22 Chronic kidney disease	36.6	10.0	3.5	22 Other musculoskeletal	19.9	6.0	0.8
23 Asthma	23 Migraine	29.7	5.6	-0.3	23 Migraine	15.3	2.0	0.8
24 Diabetes	24 Meningitis	-23.9	-38.3	-26.8	24 Neonatal sepsis	-0.2	-11.7	-5.5
25 Neonatal sepsis	25 Other musculoskeletal	51.5	23.3	13.4	25 Asthma	-2.6	-13.9	-16.9
26 Tetanus	26 Asthma	-12.3	-28.7	-31.2	26 Falls	9.2	-3.3	-8.7
27 Lung cancer	27 Protein-energy malnutrition	-36.1	-48.0	-36.2	27 Meningitis	-10.6	-21.4	-17.8
28 Falls	28 Measles	-65.1	-71.8	-64.6	28 Anxiety disorders	14.8	1.5	1.0
29 Migraine	29 Drowning	-38.0	-49.6	-42.8	29 Alzheimer's disease	32.8	17.4	-3.4
30 Chronic kidney disease	30 Falls	6.0	-13.7	-15.4	30 Interpersonal violence	-5.9	-16.8	-16.1
31 Interpersonal violence	31 Other neonatal				31 Protein-energy malnutrition			
34 Other musculoskeletal	32 Interpersonal violence				34 Other neonatal			
37 Anxiety disorders	33 Anxiety disorders				35 Drowning			
42 HIV/AIDS	37 Alzheimer's disease				81 Measles			
49 Alzheimer's disease	72 Tetanus				100 Tetanus			

■ Communicable, maternal, neonatal, and nutritional
■ Non-communicable
■ Injuries



Causes of DALYs, global, 1990-2015

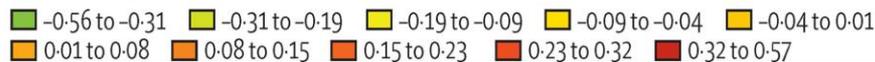


Disability-adjusted life years (DALYs) are years of healthy life lost to premature death and disability. This figure shows that communicable diseases declined between 1990 and 2015.

Figure 3

	1	2	3	4	5	6	7	8	9	10
Early neonatal (0-6 days)	NN Preterm	NN Enceph	NN Sepsis	Congenital	Other NN	LRI	NN Haemol	STD	Diarrhoea	Meningitis
Late neonatal (7-27 days)	NN Sepsis	NN Preterm	NN Enceph	Congenital	LRI	Other NN	Diarrhoea	Meningitis	Malaria	NN Haemol
Post-neonatal (28-364 days)	LRI	Diarrhoea	Congenital	Malaria	PEM	Meningitis	HIV	Haemog	Iron	NN Preterm
1-4 years	Malaria	Diarrhoea	LRI	PEM	Iron	Congenital	Meningitis	Drowning	Skin	Haemog
5-9 years	Iron	Skin	LRI	Diarrhoea	Intest inf	Malaria	HIV	Asthma	Road injuries	Congenital
10-14 years	Iron	Skin	HIV	Conduct	Asthma	Road injuries	Anxiety	Intest inf	Migraine	Haemog
15-19 years	Road injuries	Skin	Depression	Iron	Back & neck	Self-harm	Migraine	Anxiety	Violence	HIV
20-24 years	Road injuries	Depression	Self-harm	Back & neck	Skin	Violence	HIV	Migraine	Iron	Other MSK
25-29 years	Road injuries	HIV	Back & neck	Depression	Self-harm	Migraine	Skin	Violence	TB	Drugs
30-34 years	HIV	Back & neck	Road injuries	Depression	Self-harm	Migraine	IHD	TB	Skin	Violence
35-39 years	HIV	Back & neck	Road injuries	Depression	IHD	Migraine	TB	Self-harm	Stroke	Other MSK
40-44 years	Back & neck	HIV	IHD	Road injuries	Depression	Stroke	Diabetes	Sense	TB	Migraine
45-49 years	IHD	Back & neck	Stroke	Diabetes	HIV	Depression	Road injuries	Sense	TB	Other MSK
50-54 years	IHD	Stroke	Back & neck	Diabetes	Sense	Depression	Lung C	COPD	Road injuries	TB
55-59 years	IHD	Stroke	Back & neck	Diabetes	Sense	COPD	Lung C	Depression	TB	CKD
60-64 years	IHD	Stroke	Diabetes	Back & neck	COPD	Sense	Lung C	CKD	LRI	Depression
65-69 years	IHD	Stroke	COPD	Diabetes	Sense	Back & neck	Lung C	CKD	LRI	Stomach C
70-74 years	IHD	Stroke	COPD	Sense	Diabetes	Back & neck	Lung C	LRI	Alzheimer's	CKD
75-79 years	IHD	Stroke	COPD	Sense	Diabetes	Alzheimer's	Back & neck	LRI	Lung C	CKD
≥80 years	IHD	Stroke	Alzheimer's	COPD	Sense	LRI	Diabetes	CKD	Back & neck	HTN HD

Rate of change 2005-15 (%)



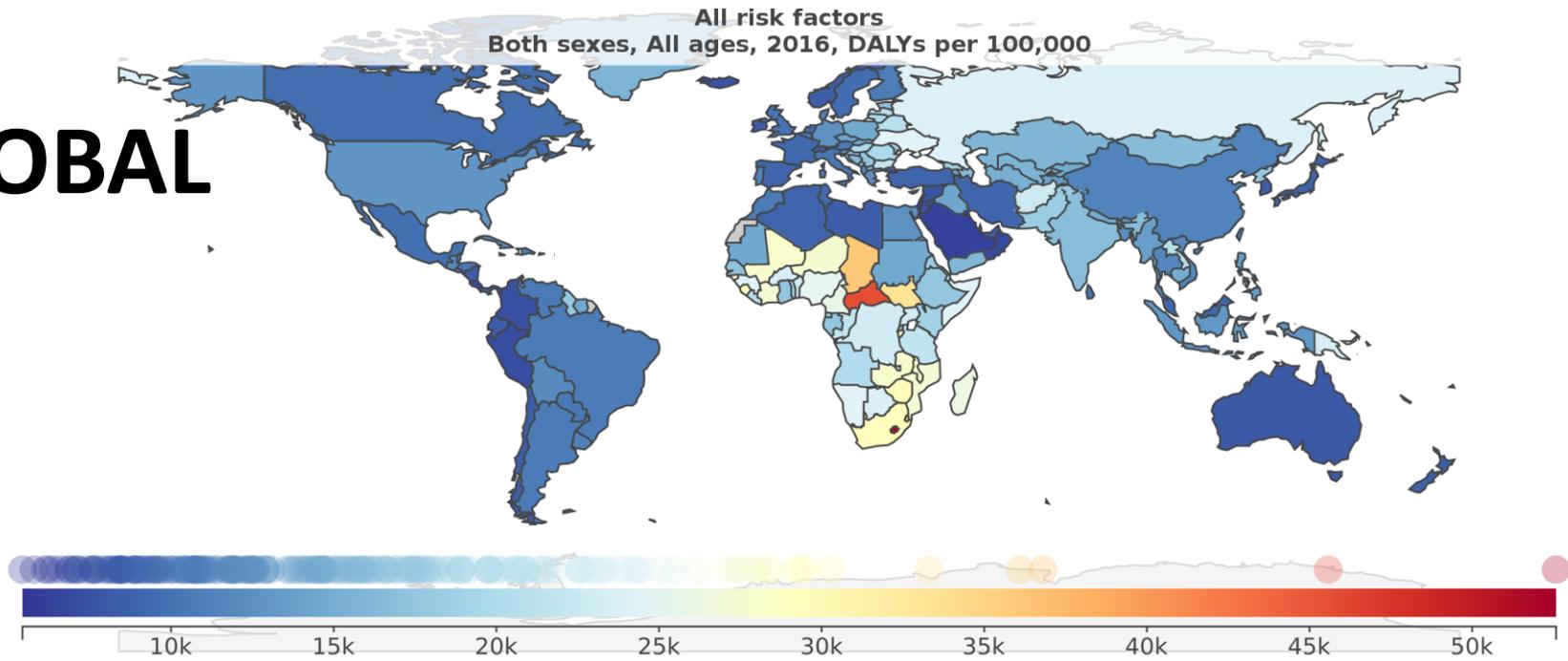


What are GBD's main findings?

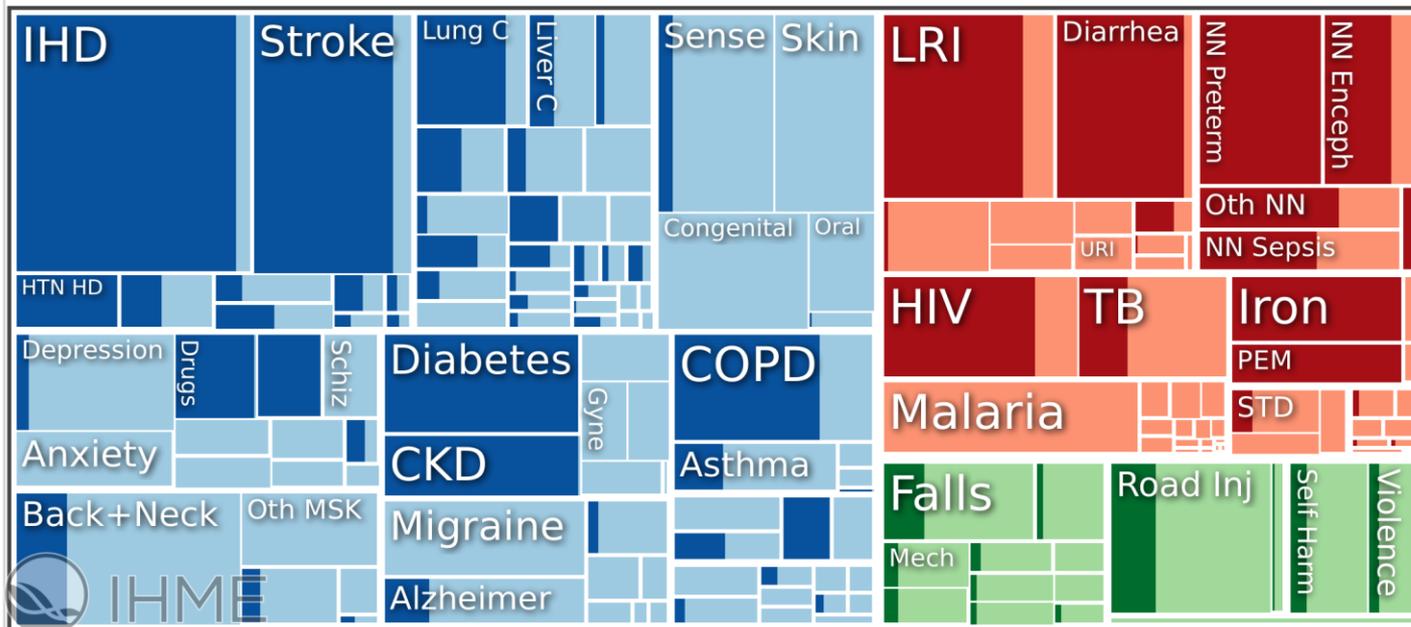
- The world is in the midst of an “epidemiological transition,” which means that as countries increase their levels of development, early death and disability from communicable diseases are declining and life expectancies are rising.
- While more developed countries tend to be healthier than less developed ones, some countries are much healthier than expected given their level of development, such as Ethiopia and Spain.
- People’s exposure to poor sanitation, indoor air pollution, and childhood undernutrition has dropped, resulting in dramatic declines in the burden of diarrhea and pneumonia in children.
- Several risk factors linked to development increased markedly from 1990 to 2015. These include obesity/overweight, high blood sugar, ambient air pollution, and drug use.

The disease burden by country

GLOBAL



Global
Both sexes, All ages, 2016, DALYs attributable to All risk factors

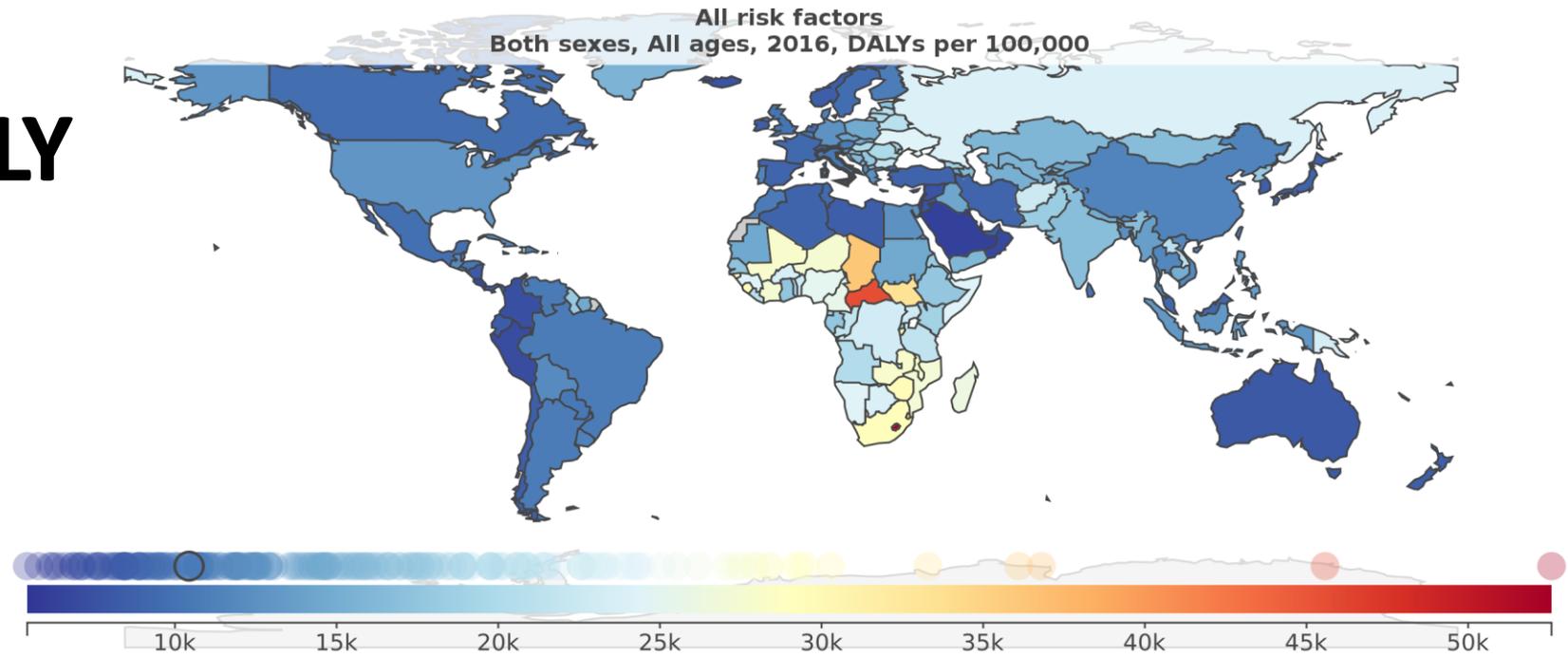


DALYs attributable to risk

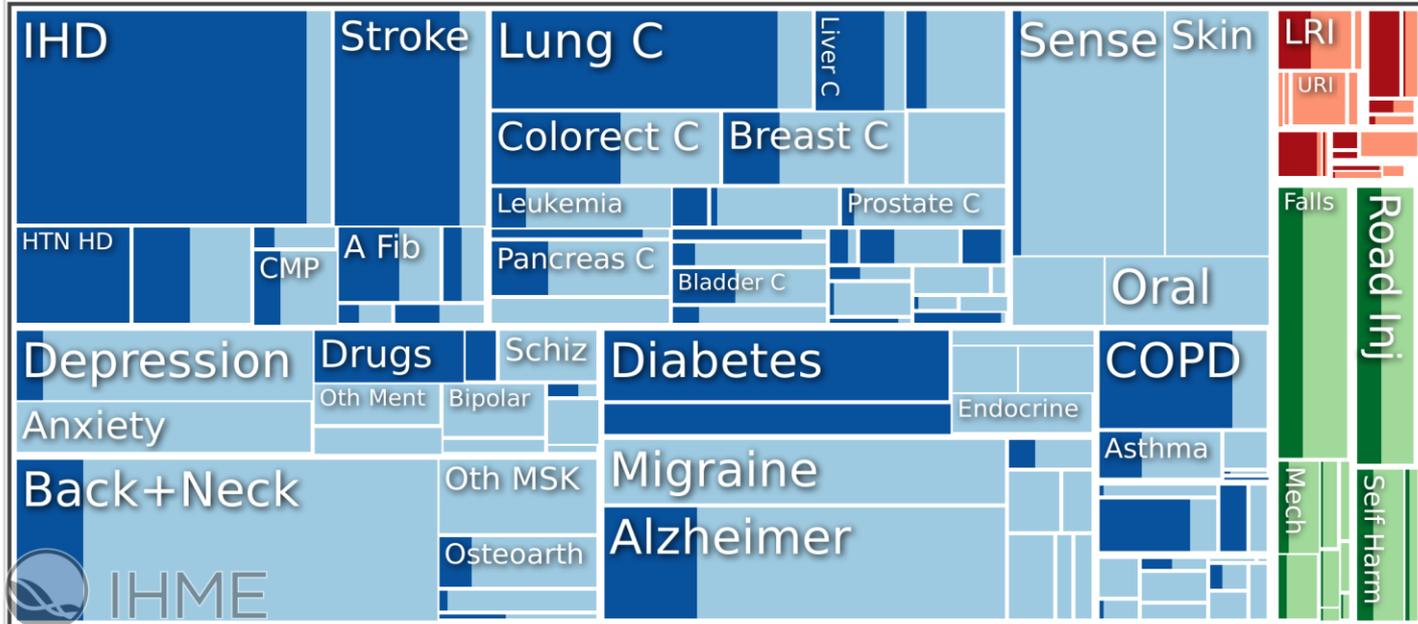
DALYs not attributable to risk



ITALY



Italy
Both sexes, All ages, 2016, DALYs attributable to All risk factors



DALYs attributable to risk

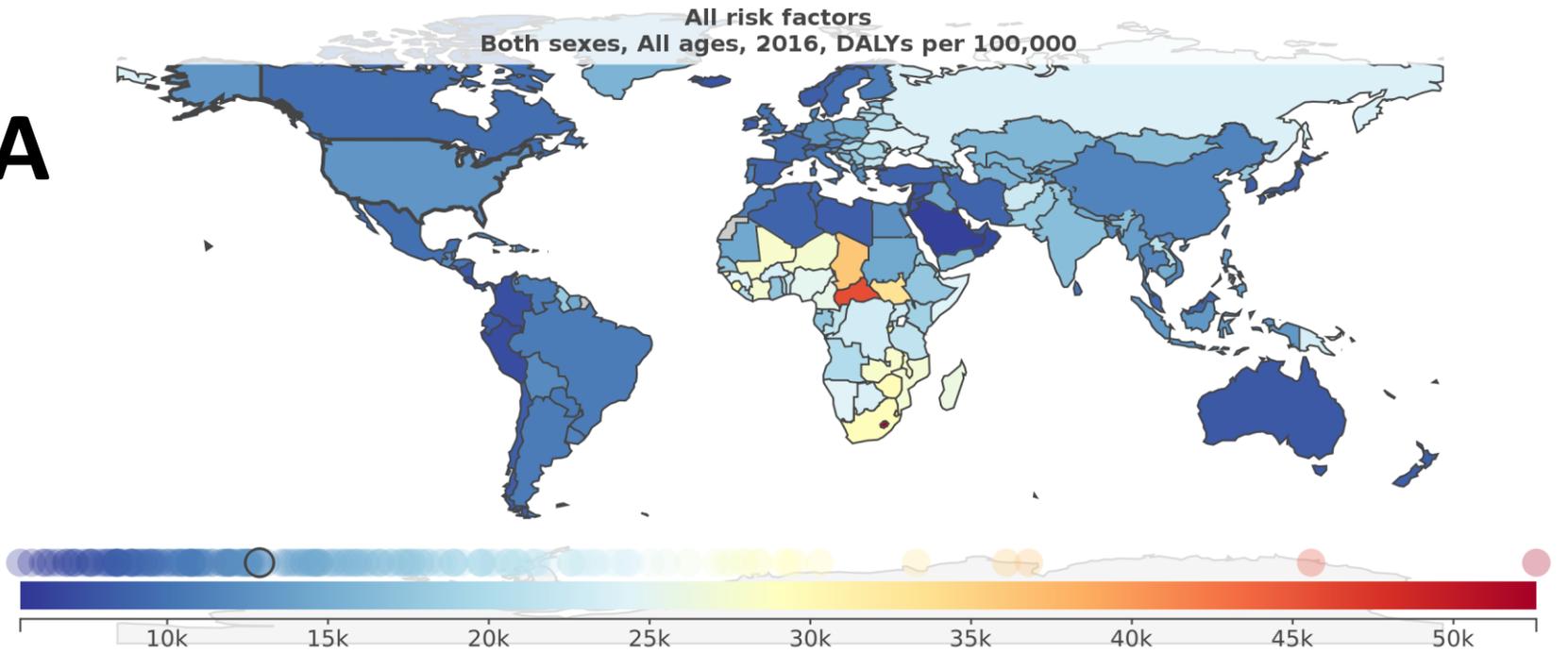
Red Blue Green

DALYs not attributable to risk

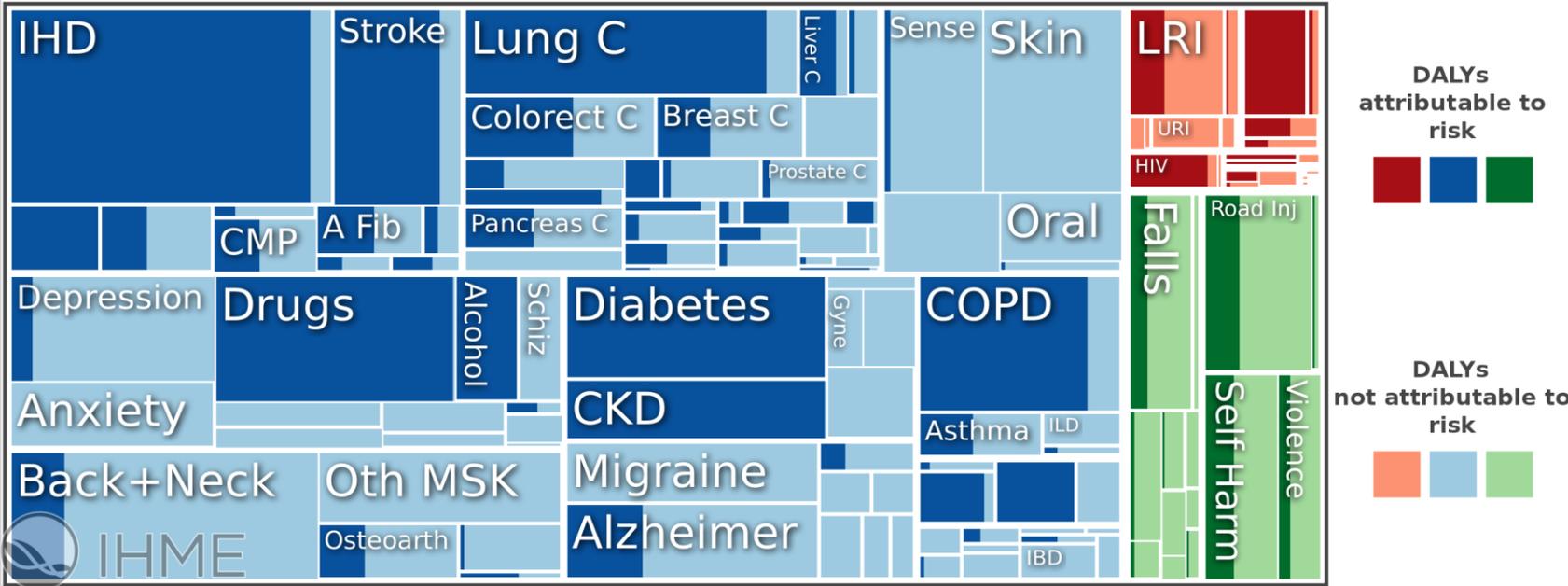
Orange Light Blue Green



USA

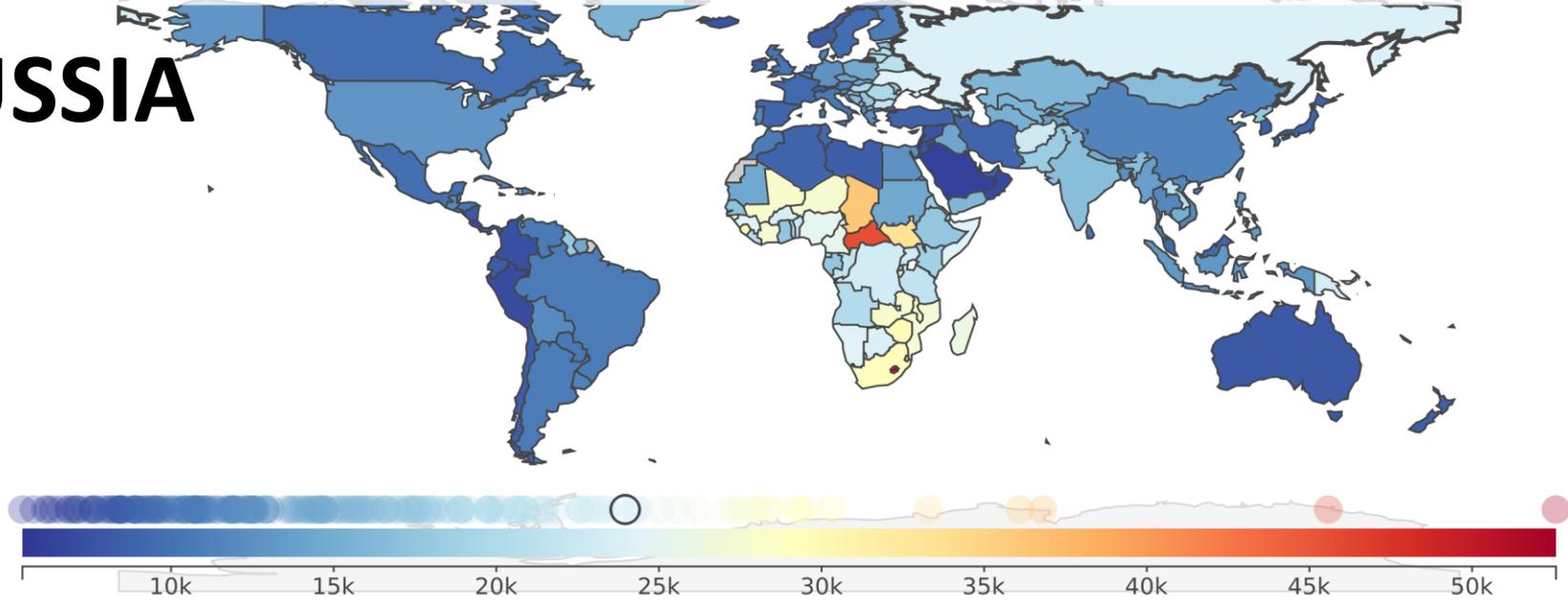


United States
Both sexes, All ages, 2016, DALYs attributable to All risk factors

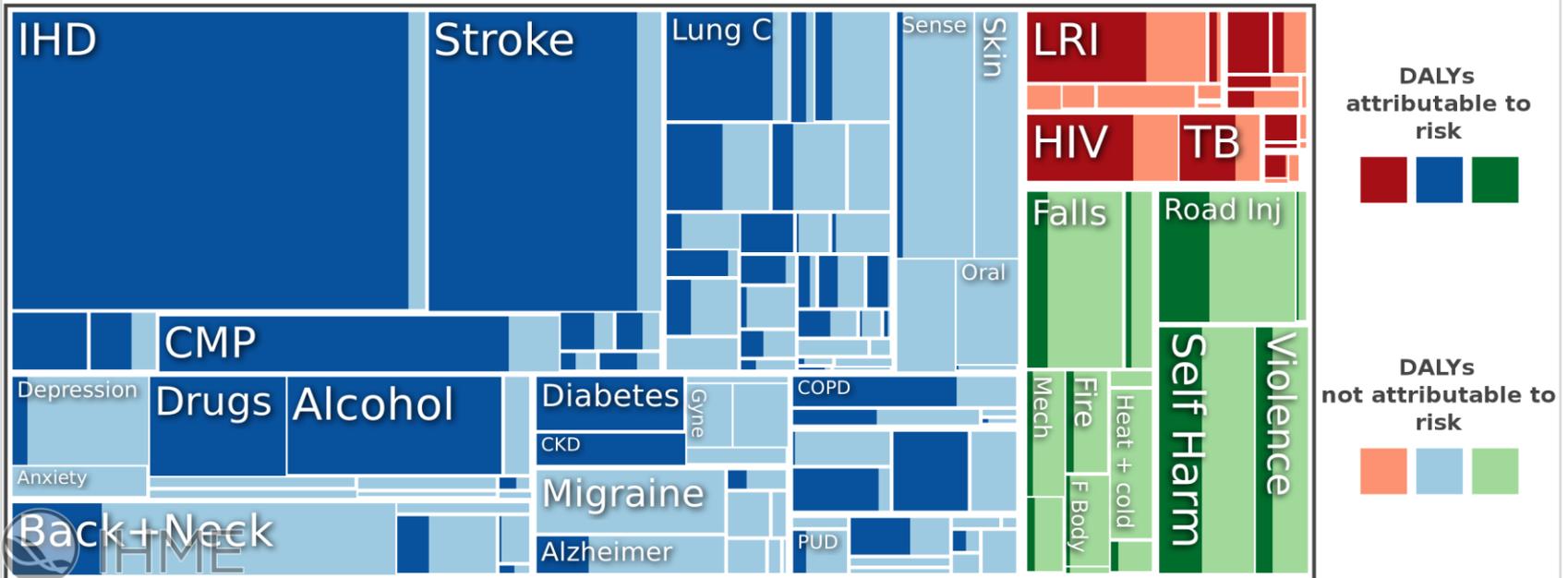


RUSSIA

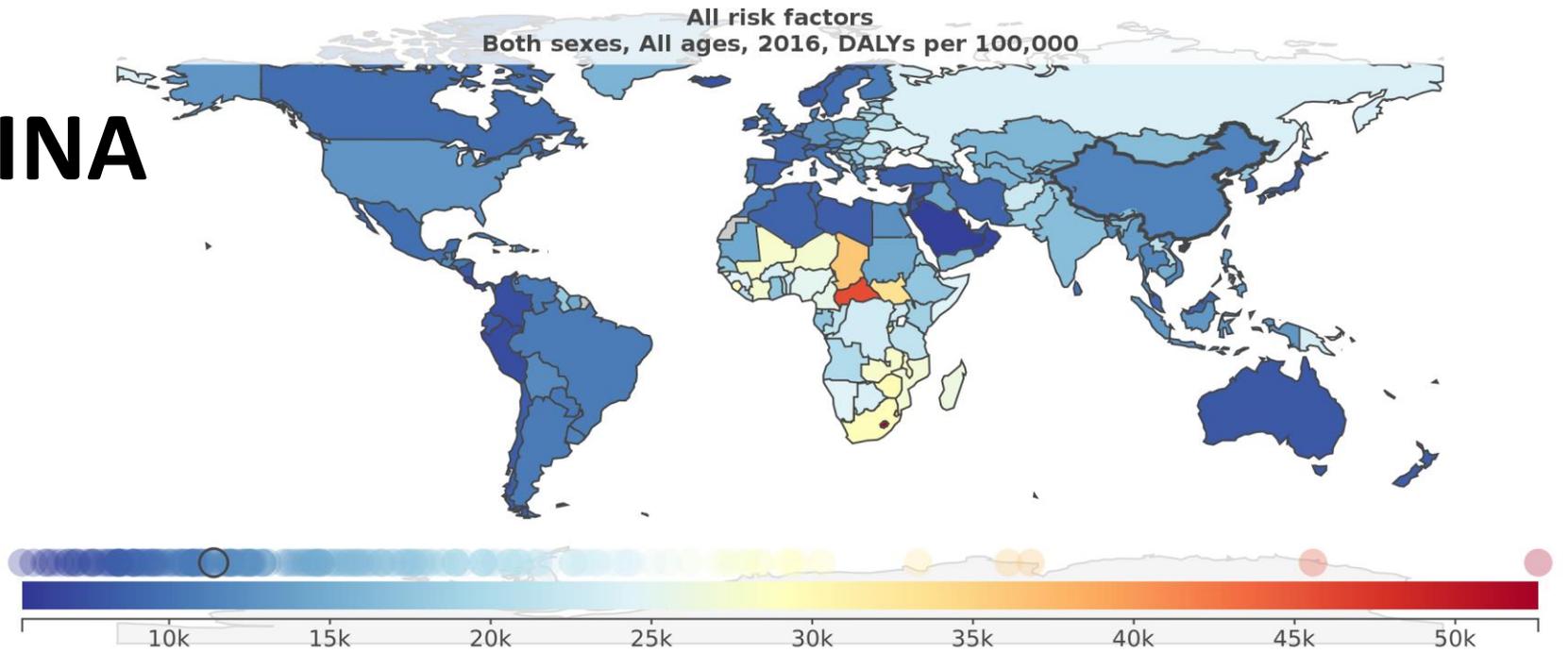
All risk factors
Both sexes, All ages, 2016, DALYs per 100,000



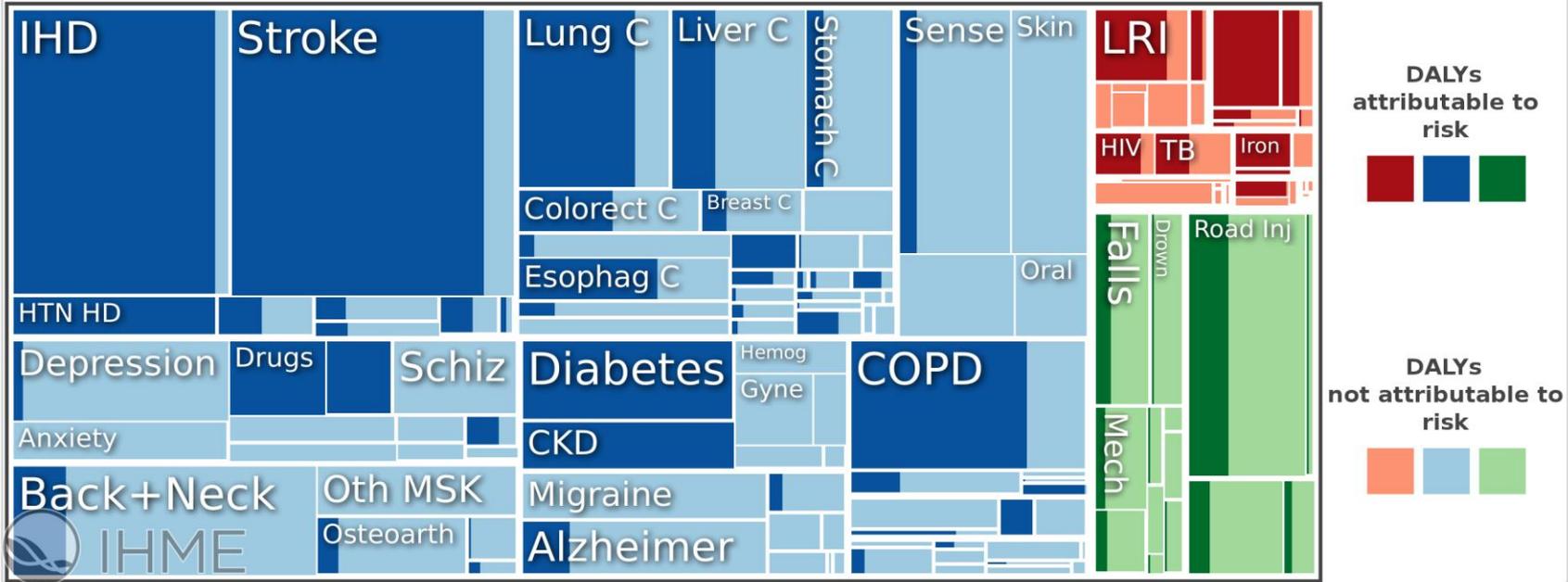
Russia
Both sexes, All ages, 2016, DALYs attributable to All risk factors



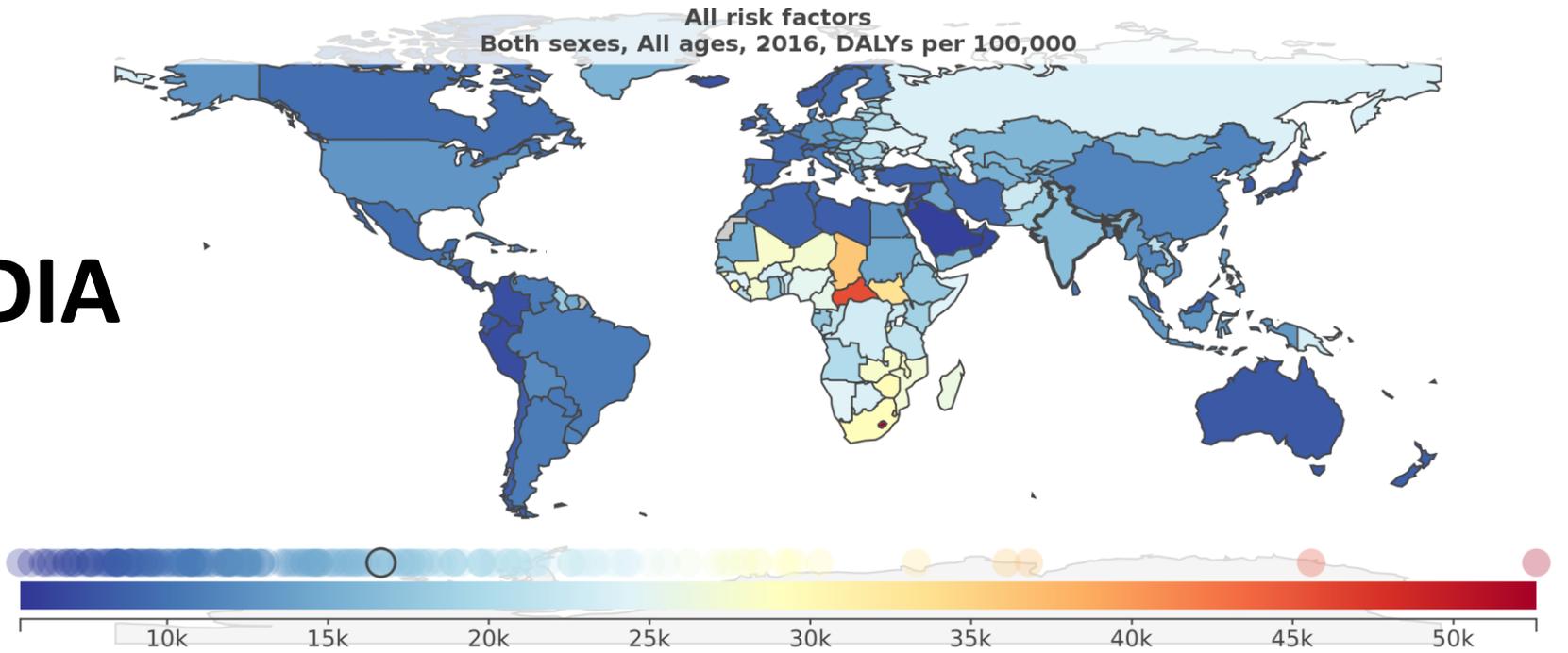
CHINA



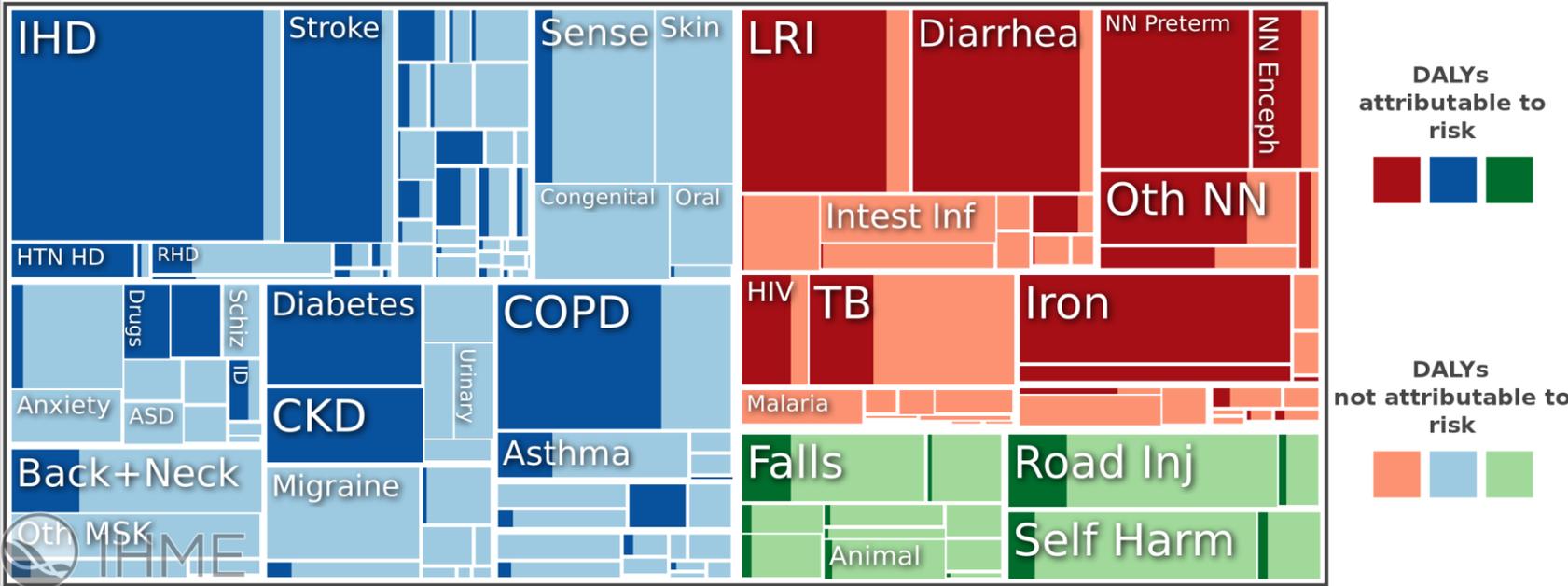
China
Both sexes, All ages, 2016, DALYs attributable to All risk factors



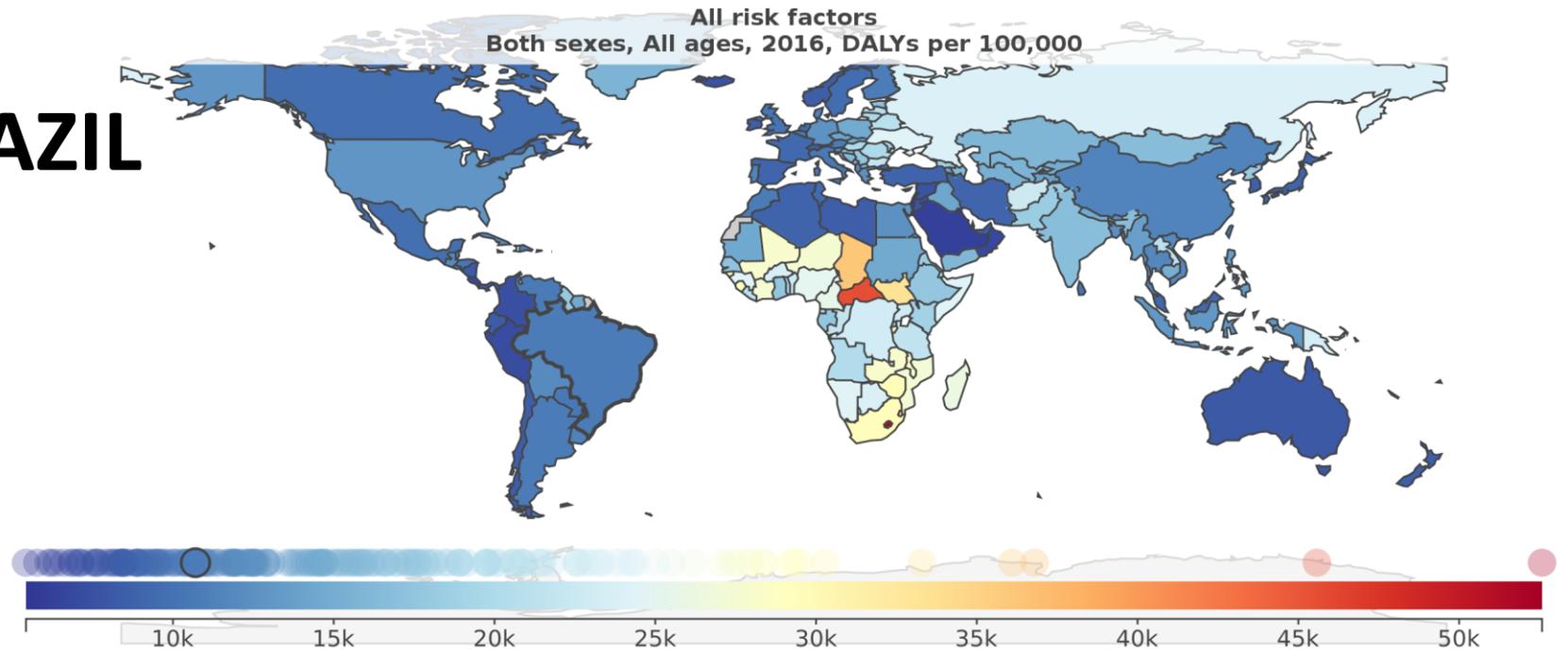
INDIA



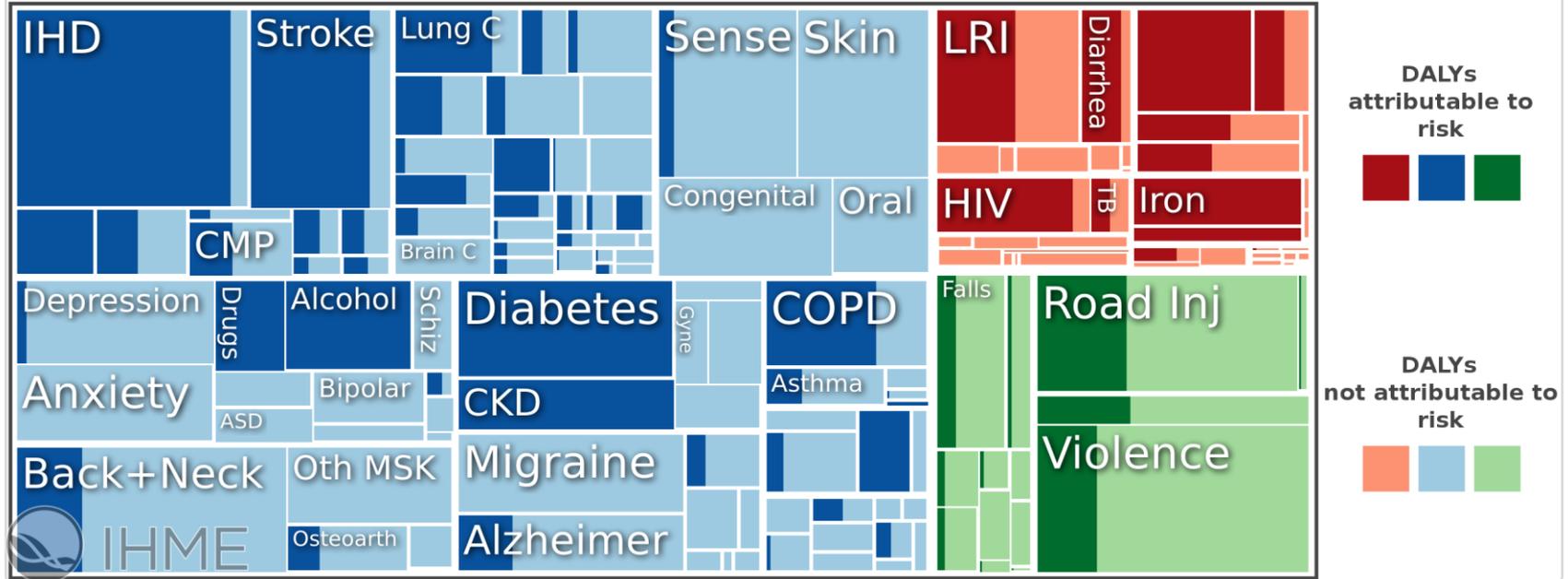
India
Both sexes, All ages, 2016, DALYs attributable to All risk factors



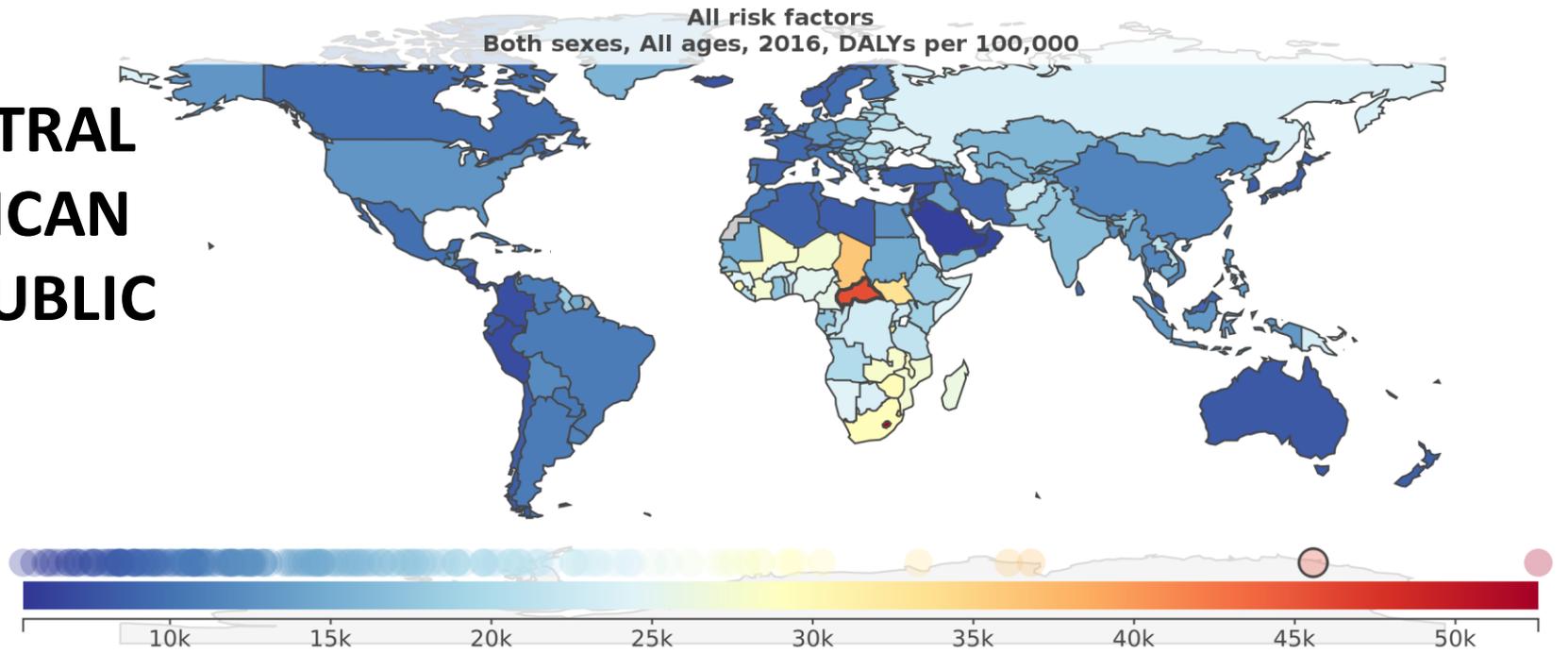
BRAZIL



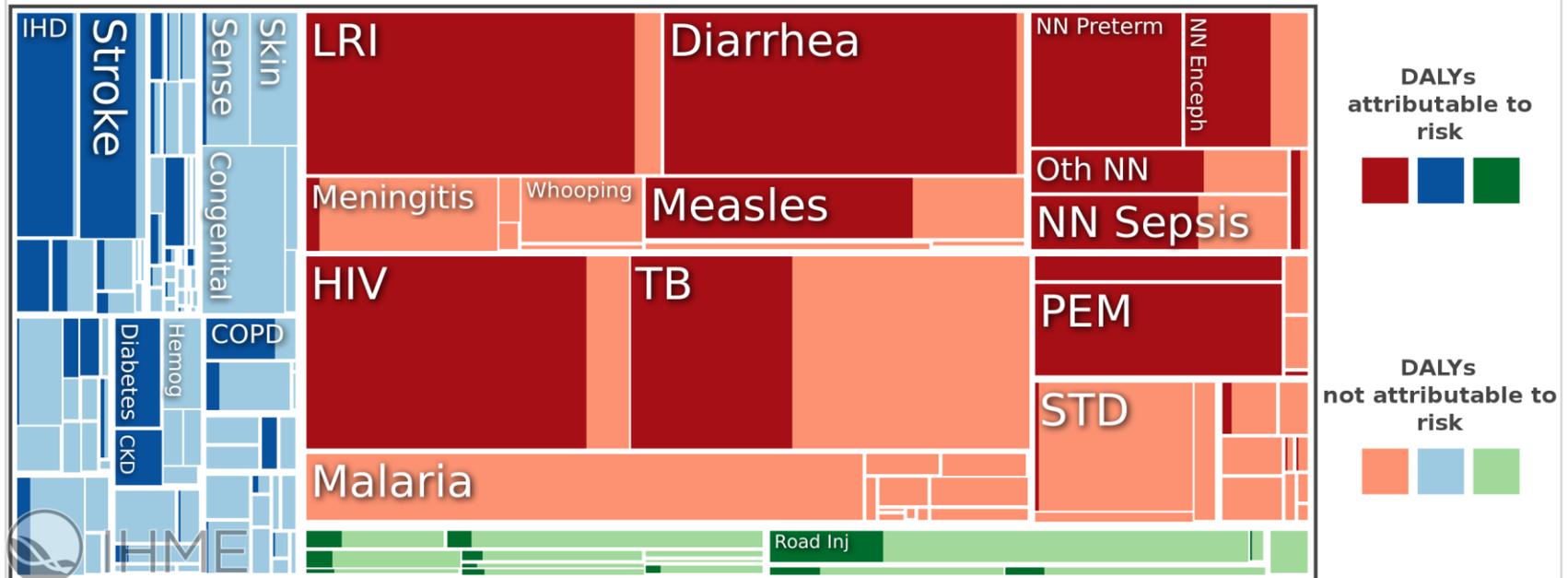
**Brazil
Both sexes, All ages, 2016, DALYs attributable to All risk factors**



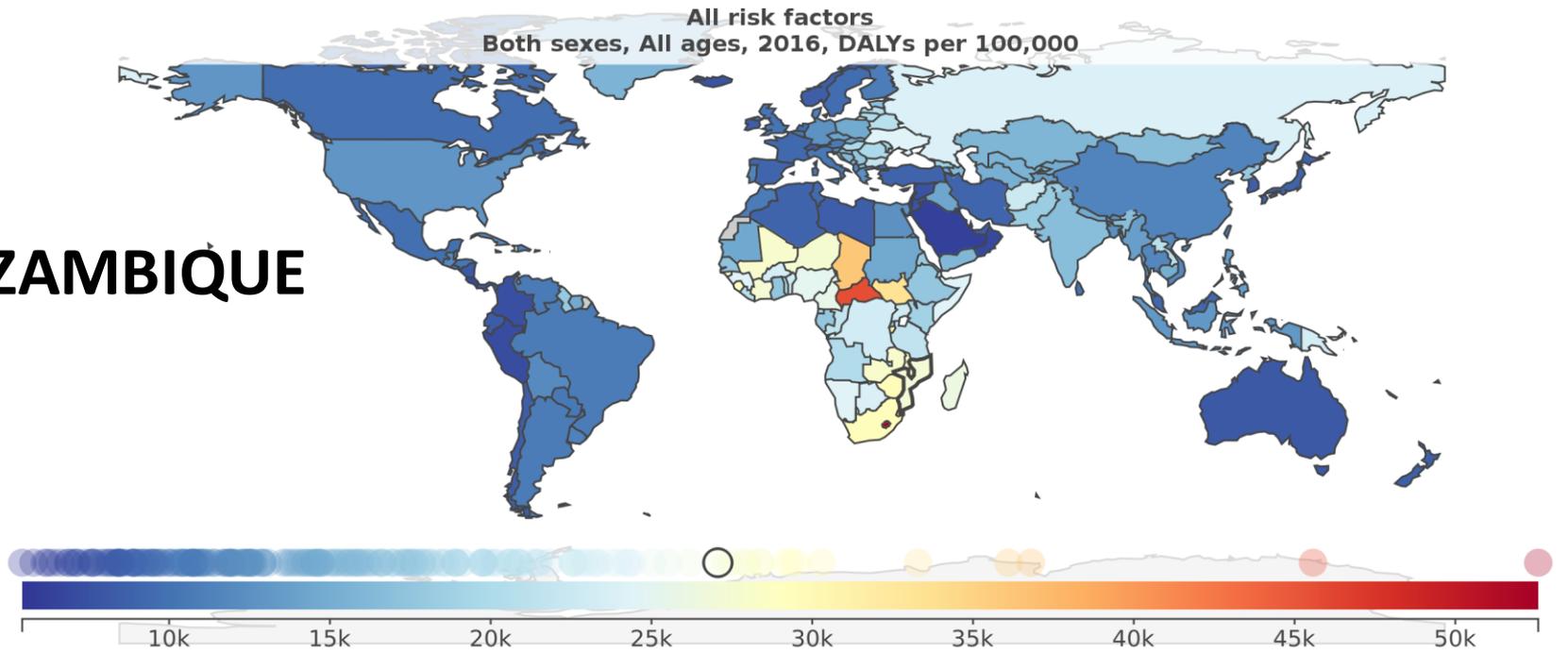
CENTRAL AFRICAN REPUBLIC



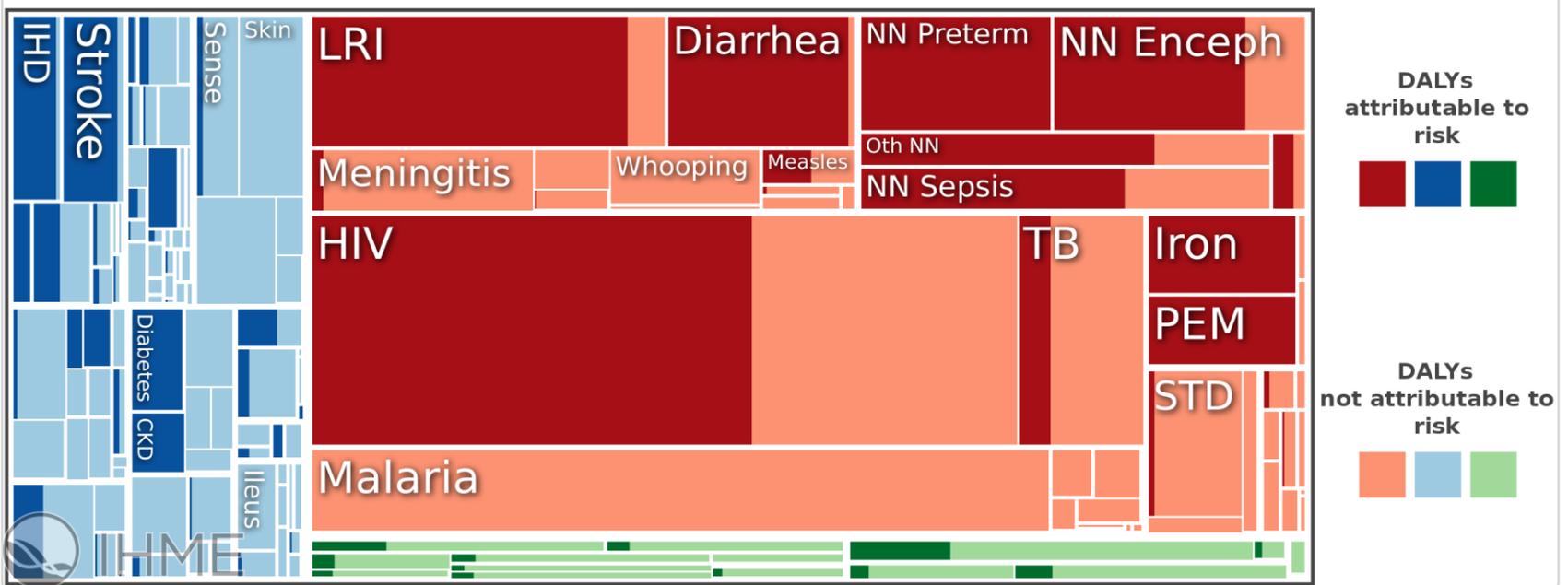
Central African Republic
Both sexes, All ages, 2016, DALYs attributable to All risk factors



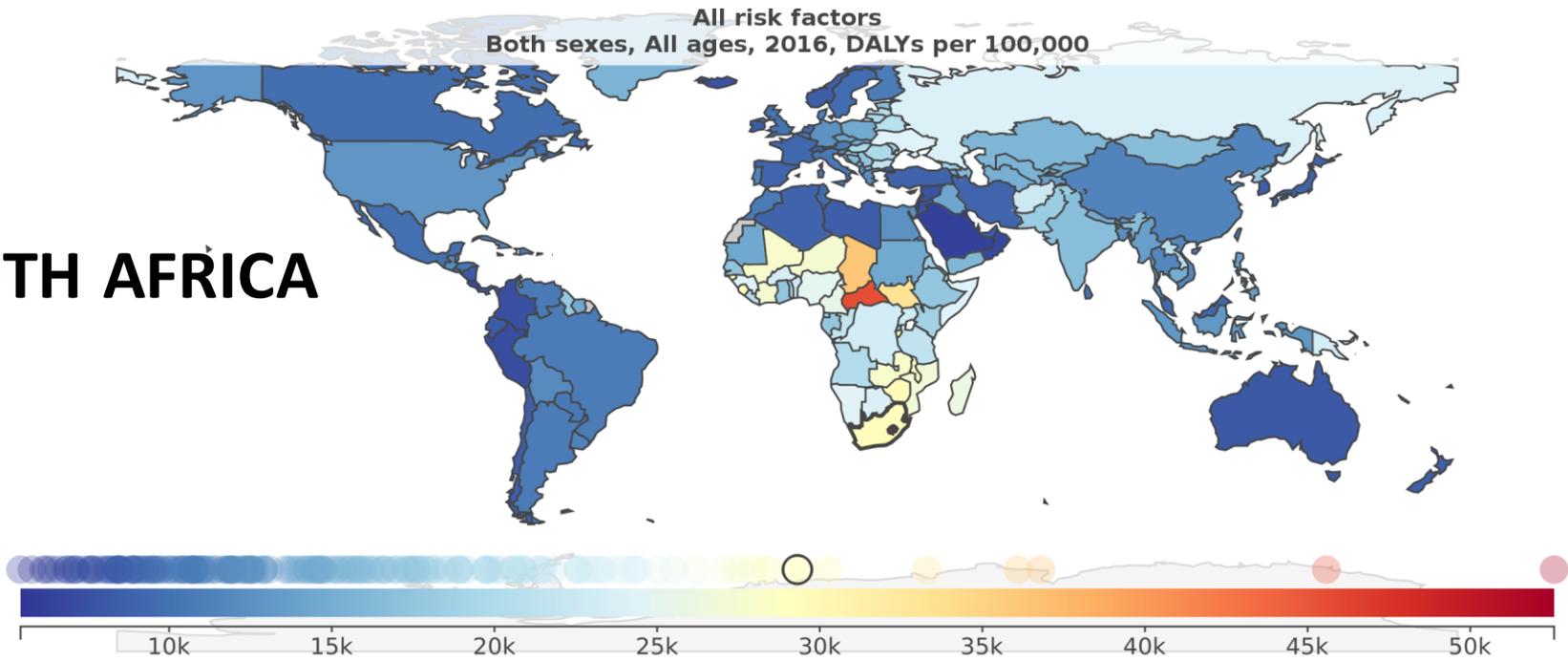
MOZAMBIQUE



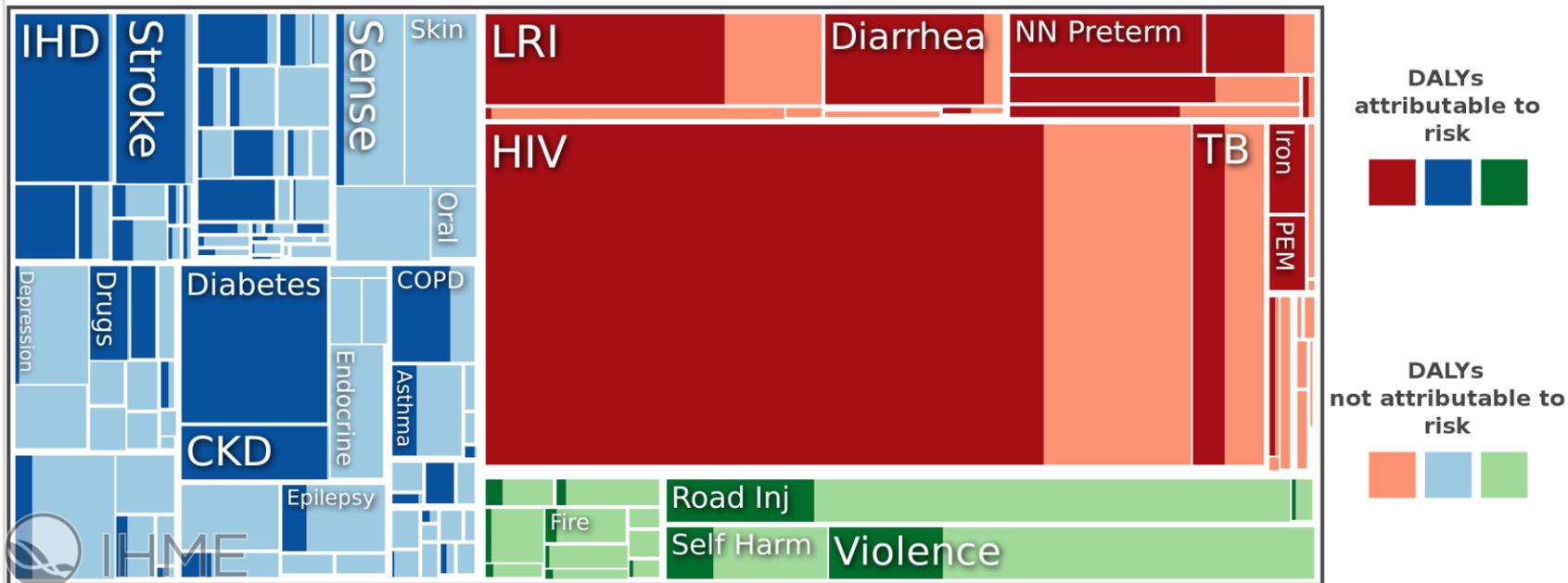
Mozambique
Both sexes, All ages, 2016, DALYs attributable to All risk factors



SOUTH AFRICA



South Africa
Both sexes, All ages, 2016, DALYs attributable to All risk factors



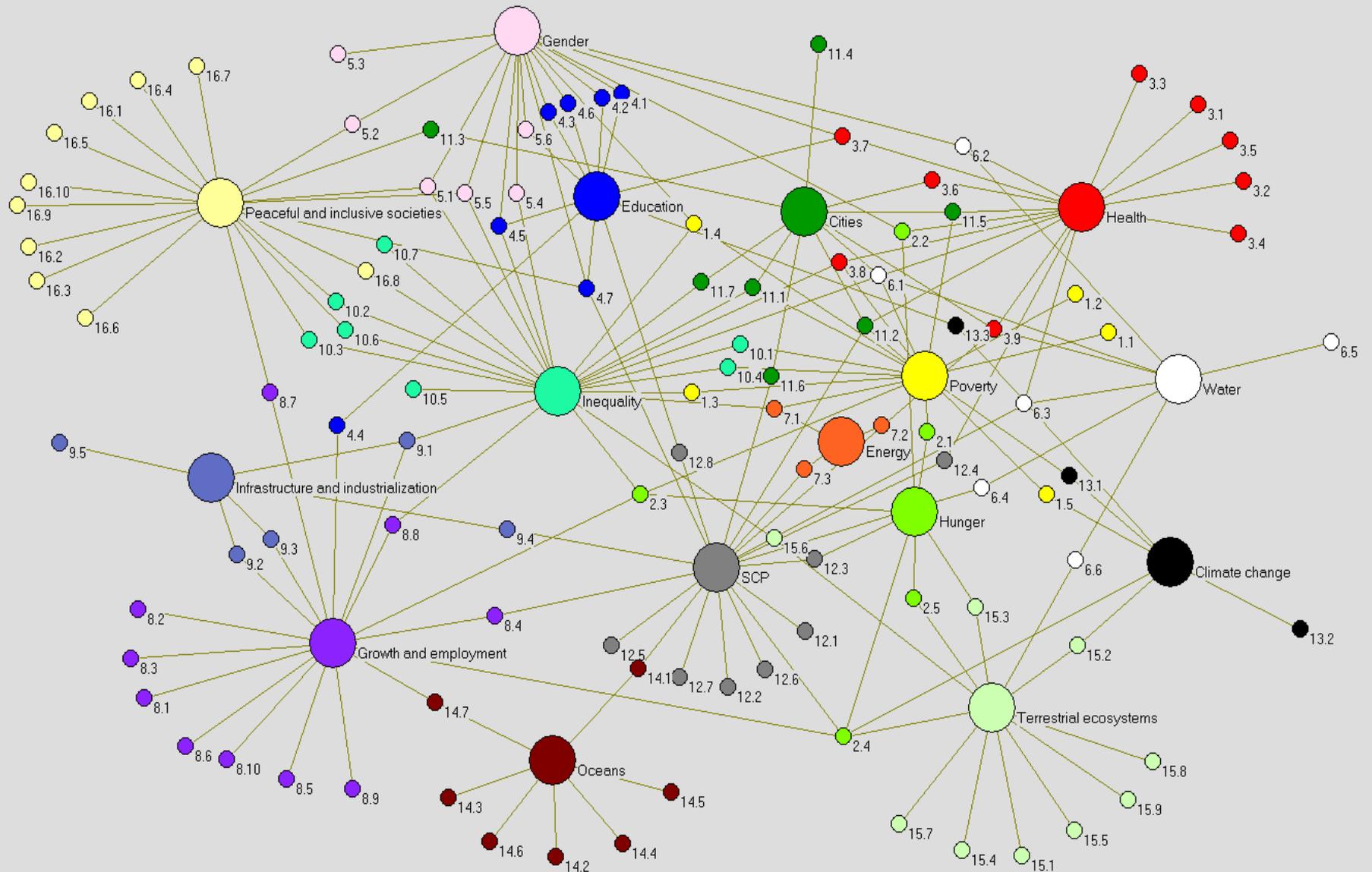
4. The Sustainable Development Goals

Figure 1. The 17 Sustainable Development Goals



“Transforming our world: the 2030 Agenda for Sustainable Development”,
<https://sustainabledevelopment.un.org/post2015/transformingourworld>.

SDGs INTERLINKAGE



SDG # 3

SUSTAINABLE DEVELOPMENT GOAL 3 AND ITS TARGETS

SDG 3: ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

TARGET 3.8: ACHIEVE UNIVERSAL HEALTH COVERAGE, INCLUDING FINANCIAL RISK PROTECTION, ACCESS TO QUALITY ESSENTIAL HEALTH-CARE SERVICES, MEDICINES AND VACCINES FOR ALL

MDG UNFINISHED AND EXPANDED AGENDA

- 3.1: Reduce maternal mortality
- 3.2: End preventable newborn and child deaths
- 3.3: End the epidemics of AIDS, TB, malaria and NTDs
and combat hepatitis, waterborne and other communicable diseases
- 3.7: Ensure universal access to sexual and reproductive health-care services

NEW SDG 3 TARGETS

- 3.4: Reduce mortality from NCDs and promote mental health
- 3.5: Strengthen prevention and treatment of substance abuse
- 3.6: Halve global deaths and injuries from road traffic accidents
- 3.9: Reduce deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

SDG 3 MEANS OF IMPLEMENTATION TARGETS

- 3.a: Strengthen implementation of framework convention on tobacco control
- 3.b: Provide access to medicines and vaccines for all, support R&D of vaccines and medicines for all
- 3.c: Increase health financing and health workforce in developing countries
- 3.d: Strengthen capacity for early warning, risk reduction and management of health risks

INTERACTIONS WITH ECONOMIC, OTHER SOCIAL AND ENVIRONMENTAL SDGs AND SDG 17 ON MEANS OF IMPLEMENTATION

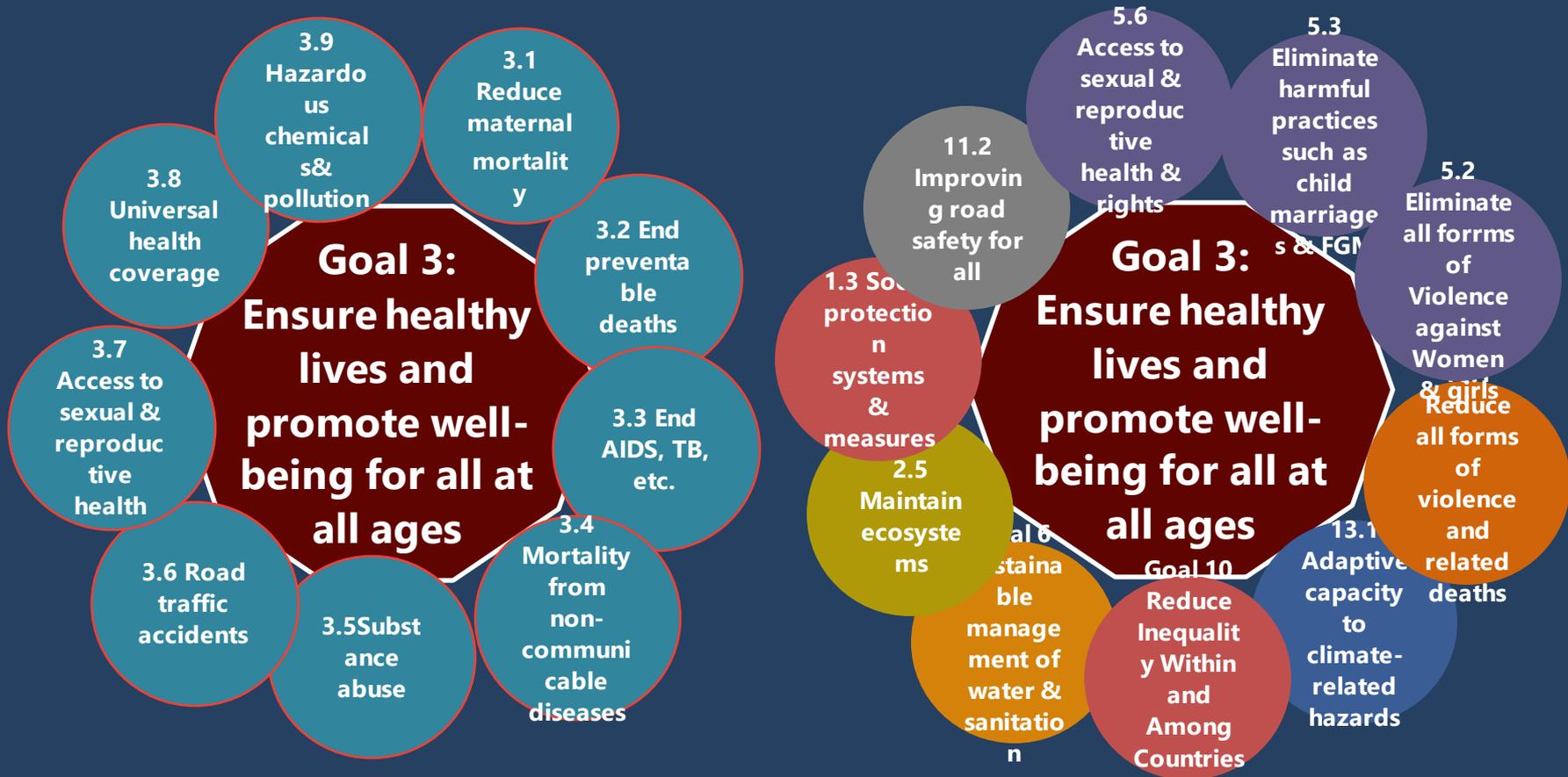
SDG # 3 - Targets

- By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births
- By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births
- By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases
- By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
- Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol
- By 2020, halve the number of global deaths and injuries from road traffic accidents
- By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes from hazardous chemicals and air, water and soil pollution and contamination
- Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate

SDG # 3 - Targets

- Support the research and development of vaccines and medicines for the communicable and noncommunicable diseases that primarily affect developing countries, provide access to affordable essential medicine
- Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all
- By 2030, substantially reduce the number of deaths and illnesses and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all
- Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States
- Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

Intersections between SDG #3 and other SDGs



MEASURING THE DISTANCE TO TARGETS

MEASURING DISTANCE TO THE SDG TARGETS

An assessment of where OECD countries stand

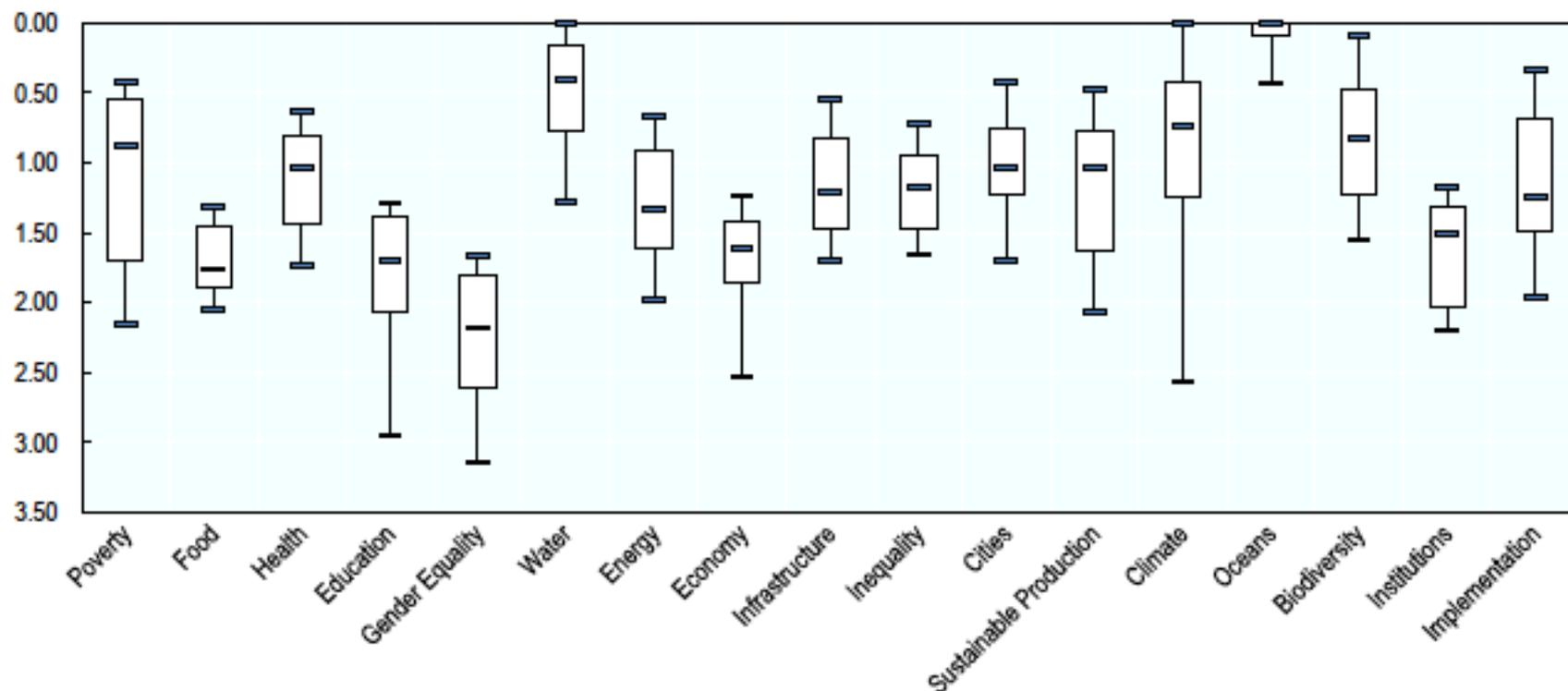
June 2017



Goal 3. Ensure healthy lives and promote well-being for all at all ages

3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	3.1.1	Maternal mortality ratio	Maternal mortality	70.00	OECD Health Data
3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births	3.2.1	Under-five mortality rate	UN-STAT	25.00	UN-STAT
	3.2.2	Neonatal mortality rate	Neonatal mortality	12.00	OECD Health Data
	3.2.3	-	Low birthweight	4.33 (**)	OECD Health Data
	3.3.1	Estimated HIV incidence rate	AIDS incidence	0.00	OECD Health Data
3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	3.3.2	Tuberculosis incidence per 100,000 population	UN-STAT	0.00	UN-STAT
	3.3.4	-	Hepatitis B incidence	0.00	OECD Health Data
	3.3.5	Number of people requiring interventions against neglected tropical diseases	UN-STAT	0	UN-STAT
3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	3.4.1	Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease	Premature mortality	2004.40 (**)	OECD Health Data
	3.4.2	Suicide mortality rate	Death due to intentional self-harm	0.00	OECD Health Data
	3.4.3	-	Deprivation in life satisfaction (share of the population reporting a life satisfaction at 3 or below)	0.00	OECD based on Gallup World Poll
3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	3.5.2	Alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol	Alcohol consumption	6.20 (*)	OECD Health Database
3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents	3.6.1	Death rate due to road traffic injuries	Mortality from transport accidents	3.25 (**)	OECD Health Data
3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes	3.7.2	Adolescent birth rate per 1,000 adolescent women aged 15-19	Adolescent fertility rate	0.00	OECD Family Database
3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	3.8.2	-	Coverage for health care	100.00	OECD Health Data
3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	3.9.1	Mortality rate attributed to household and ambient air pollution	UN-STAT	0.00	UN-STAT
	3.9.2	Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene	UN-STAT	0.00	UN-STAT
	3.9.3	Mortality rate attributed to unintentional poisonings	Mortality from accidental poisoning	0.00 (**)	OECD Health
3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate	3.a.1	-	Prevalence of current tobacco use	0.00	OECD Health
3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect	3.b.2	Total official flows for medical research and basic health sectors, by recipient	Official Development Assistance and Other Official Flows to the medical research and basic health sectors	0.02	OECD/DAC Creditor Reporting System (CRS) database
3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States	3.c.1	Health worker density and distribution	Health and social employment density	75.55 (*)	OECD Health Database
3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks	3.d.1	International Health Regulations (IHR) core capacity index	UN-STAT	100.00	UN-STAT

Figure 6. How OECD countries vary in their distance to targets, by SDG Goal



Note: The distribution of OECD countries' distances on the 17 Goals in standard deviation units. Central black bars: OECD median country score. Box boundaries: first and third quartiles of the country distribution. Whiskers: 10th and 90th percentiles of this distribution.



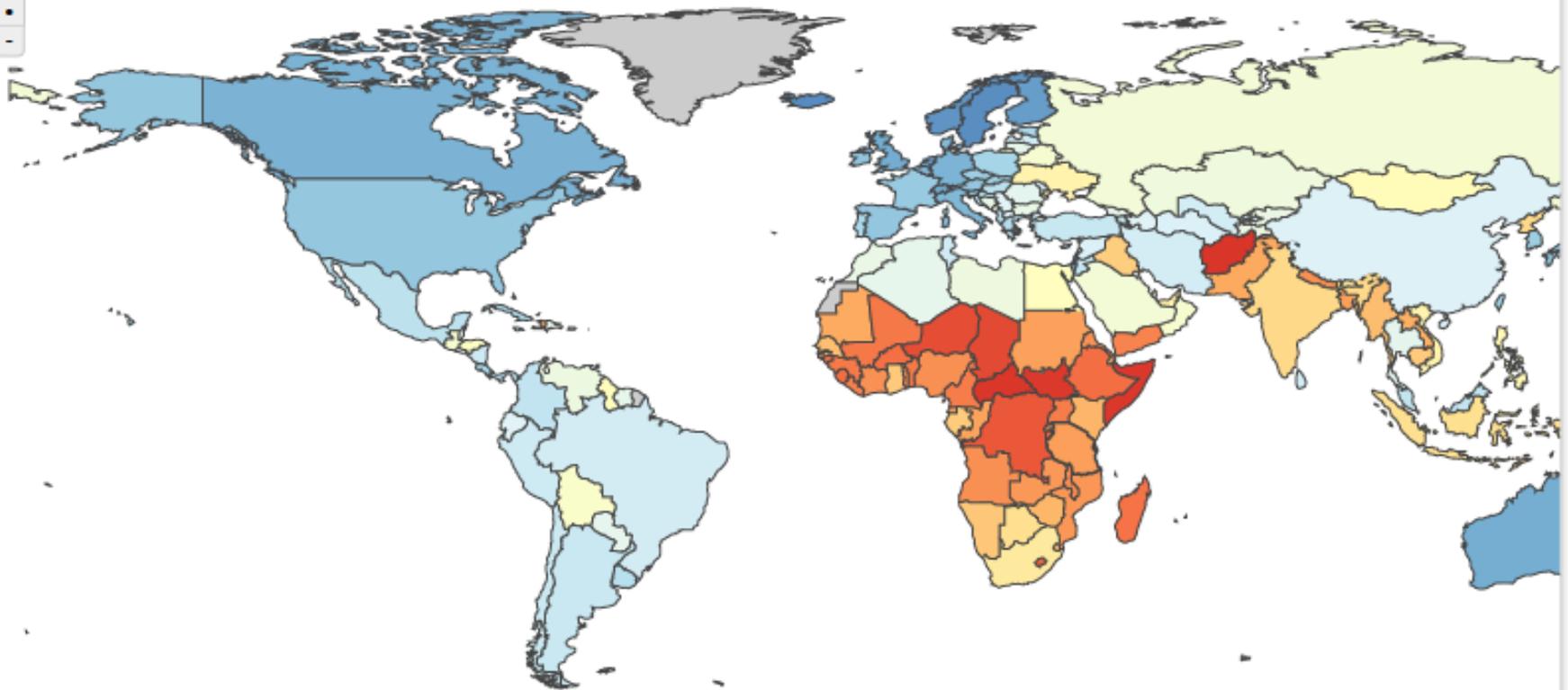
Measuring progress and projecting attainment on the basis of past trends of the health-related Sustainable Development Goals in 188 countries: an analysis from the Global Burden of Disease Study 2016

<http://www.healthdata.org/data-visualization/health-related-sdgs>

View **Country** Map Scatter Line Lock scale Off Show change Off

Indicator Year

SDG index, 2016



- **Globally, the median health-related SDG index was 56.7 (IQR 31.9–66.8) in 2016 and country-level performance markedly varied, with Singapore (86.8, 95% uncertainty interval 84.6–88.9), Iceland (86.0, 84.1–87.6), and Sweden (85.6, 81.8–87.8) having the highest levels in 2016 and Afghanistan (10.9, 9.6–11.9), the Central African Republic (11.0, 8.8–13.8), and Somalia (11.3, 9.5–13.1) recording the lowest.**

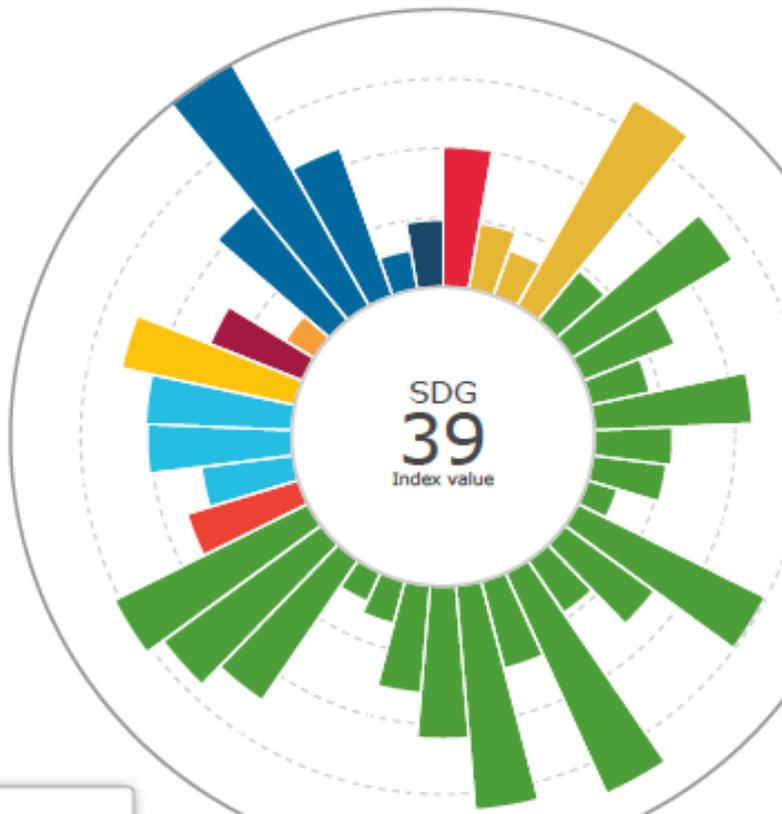
- **Between 2000 and 2016, notable improvements in the UHC index were achieved by several countries, including Cambodia, Rwanda, Equatorial Guinea, Laos, Turkey, and China; however, a number of countries, such as Lesotho and the Central African Republic, but also high-income countries, such as the US, showed minimal gains.**
- **Based on projections of past trends, the median number of SDG targets attained in 2030 was five (IQR 2–8) of the 24 defined targets currently measured.**

View **Country** Map Scatter Line Health-related index **SDG** MDG Non-MDG **Uncertainty** Off Lock scale Off

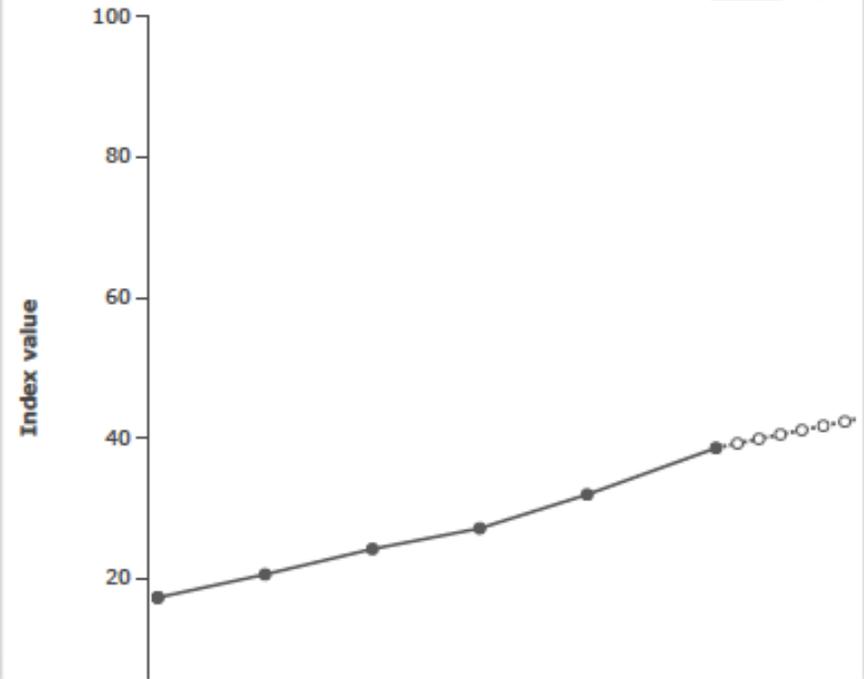
Location **India** Indicator **SDG index**

Year **2016** Labels Off

India, 2016



SDG index, India



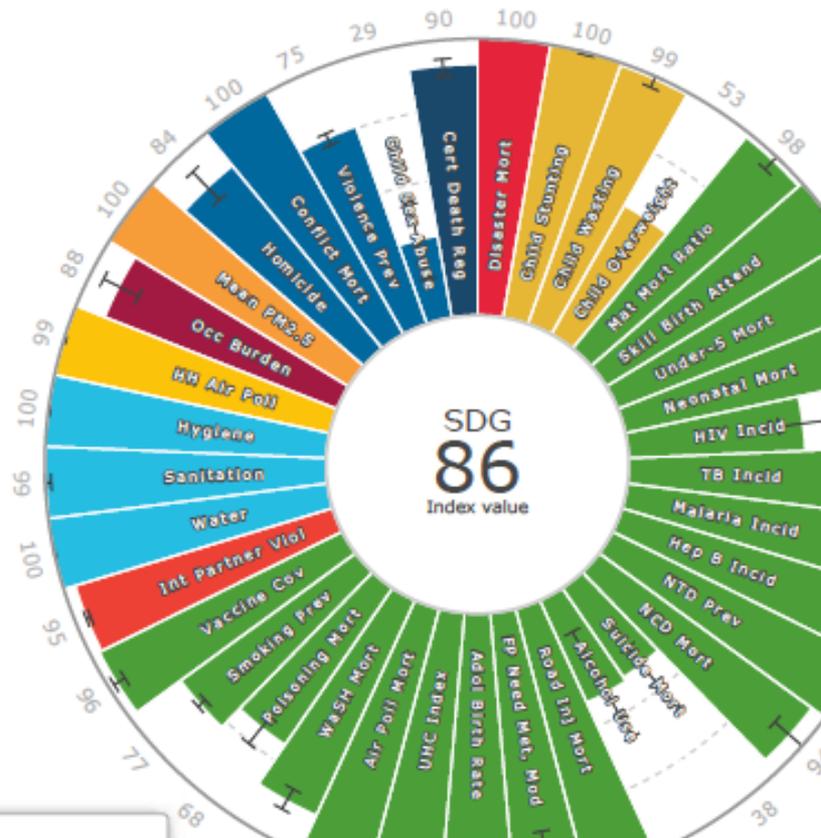
 Health-related index for all indicators.

View **Country** Map Scatter Line Health-related index **SDG** MDG Non-MDG Uncertainty On Lock scale On

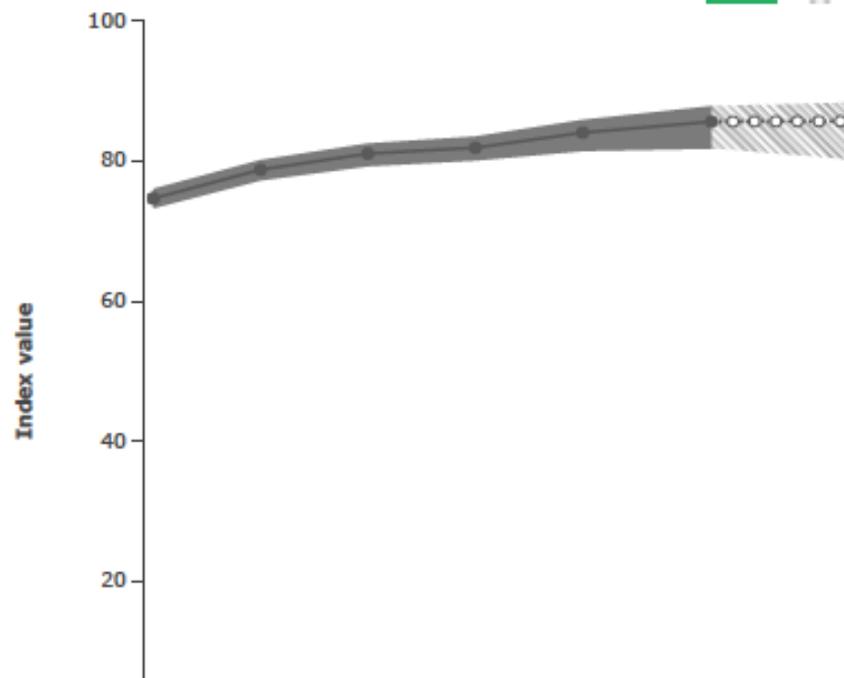
Location Sweden Indicator SDG index

Year 2016 Labels On

Sweden, 2016



SDG index, Sweden



Health-related index for all indicators.

5. Universal Health Coverage

SUSTAINABLE DEVELOPMENT GOAL 3 AND ITS TARGETS

SDG 3: ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

**TARGET 3.8: ACHIEVE UNIVERSAL HEALTH COVERAGE, INCLUDING FINANCIAL RISK PROTECTION,
ACCESS TO QUALITY ESSENTIAL HEALTH-CARE SERVICES, MEDICINES AND VACCINES FOR ALL**

MDG UNFINISHED AND EXPANDED AGENDA

- 3.1:** Reduce maternal mortality
- 3.2:** End preventable newborn and child deaths
- 3.3:** End the epidemics of AIDS, TB, malaria and NTDs
and combat hepatitis, waterborne and other communicable diseases
- 3.7:** Ensure universal access to sexual and reproductive health-care services

NEW SDG 3 TARGETS

- 3.4:** Reduce mortality from NCDs and promote mental health
- 3.5:** Strengthen prevention and treatment of substance abuse
- 3.6:** Halve global deaths and injuries from road traffic accidents
- 3.9:** Reduce deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

SDG 3 MEANS OF IMPLEMENTATION TARGETS

- 3.a:** Strengthen implementation of framework convention on tobacco control
- 3.b:** Provide access to medicines and vaccines for all, support R&D of vaccines and medicines for all
- 3.c:** Increase health financing and health workforce in developing countries
- 3.d:** Strengthen capacity for early warning, risk reduction and management of health risks

INTERACTIONS WITH ECONOMIC, OTHER SOCIAL AND ENVIRONMENTAL SDGs AND SDG 17 ON MEANS OF IMPLEMENTATION

Universal health coverage and intersectoral action for health: key messages from *Disease Control Priorities*, 3rd edition



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The World Bank is publishing nine volumes of *Disease Control Priorities*, 3rd edition (DCP3) between 2015 and 2018. Volume 9, *Improving Health and Reducing Poverty*, summarises the main messages from all the volumes and contains cross-cutting analyses. This Review draws on all nine volumes to convey conclusions. The analysis in DCP3 is built around 21 essential packages that were developed in the nine volumes. Each essential package addresses the concerns of a major professional community (eg, child health or surgery) and contains a mix of intersectoral policies and health-sector interventions. 71 intersectoral prevention policies were identified in total, 29 of which are priorities for early introduction. Interventions within the health sector were grouped into five platforms (population based, community level, health centre, first-level hospital, and referral hospital). DCP3 defines a model concept of essential universal health coverage (EUHC) with 218 interventions that provides a starting point for country-specific analysis of priorities. Assuming steady-state implementation by 2030, EUHC in lower-middle-income countries would reduce premature deaths by an estimated 4.2 million per year. Estimated total costs prove substantial: about 9.1% of (current) gross national income (GNI) in low-income countries and 5.2% of GNI in lower-middle-income countries. Financing provision of continuing intervention against chronic conditions accounts for about half of estimated incremental costs. For lower-middle-income countries, the mortality reduction from implementing the EUHC can only reach about half the mortality reduction in non-communicable diseases called for by the Sustainable Development Goals. Full achievement will require increased investment or sustained intersectoral action, and actions by finance ministries to tax smoking and polluting emissions and to reduce or eliminate (often large) subsidies on fossil fuels appear of central importance. DCP3 is intended to be a model starting point for analyses at the country level, but country-specific cost structures, epidemiological needs, and national priorities will generally lead to definitions of EUHC that differ from country to country and from the model in this Review. DCP3 is particularly relevant as achievement of EUHC relies increasingly on greater domestic finance, with global developmental assistance in health focusing more on global public goods. In addition to assessing effects on mortality, DCP3 looked at outcomes of EUHC not encompassed by the disability-adjusted life-year metric and related cost-effectiveness analyses. The other objectives included financial protection (potentially better provided upstream by keeping people out of the hospital rather than downstream by paying their hospital bills for them), stillbirths averted, palliative care, contraception, and child physical and intellectual growth. The first 1000 days after conception are highly important for child development, but the next 7000 days are likewise important and often neglected.

Introduction

In 1993, the World Bank published *Disease Control Priorities in Developing Countries* (DCP1), an attempt to systematically assess value for money (cost-effectiveness) of interventions that would address the major sources of disease burden in low-income and middle-income countries (LMICs).¹ One motivation for DCP1 was to identify reasonable responses in highly resource-constrained environments to the growing burden of non-communicable disease and of HIV/AIDS in LMICs. The World Bank had highlighted the already substantial problem of non-communicable diseases in country studies for Malaysia² and China³ and in a Shattuck Lecture.⁴ Mexican scholars pointed to the rapid growth of

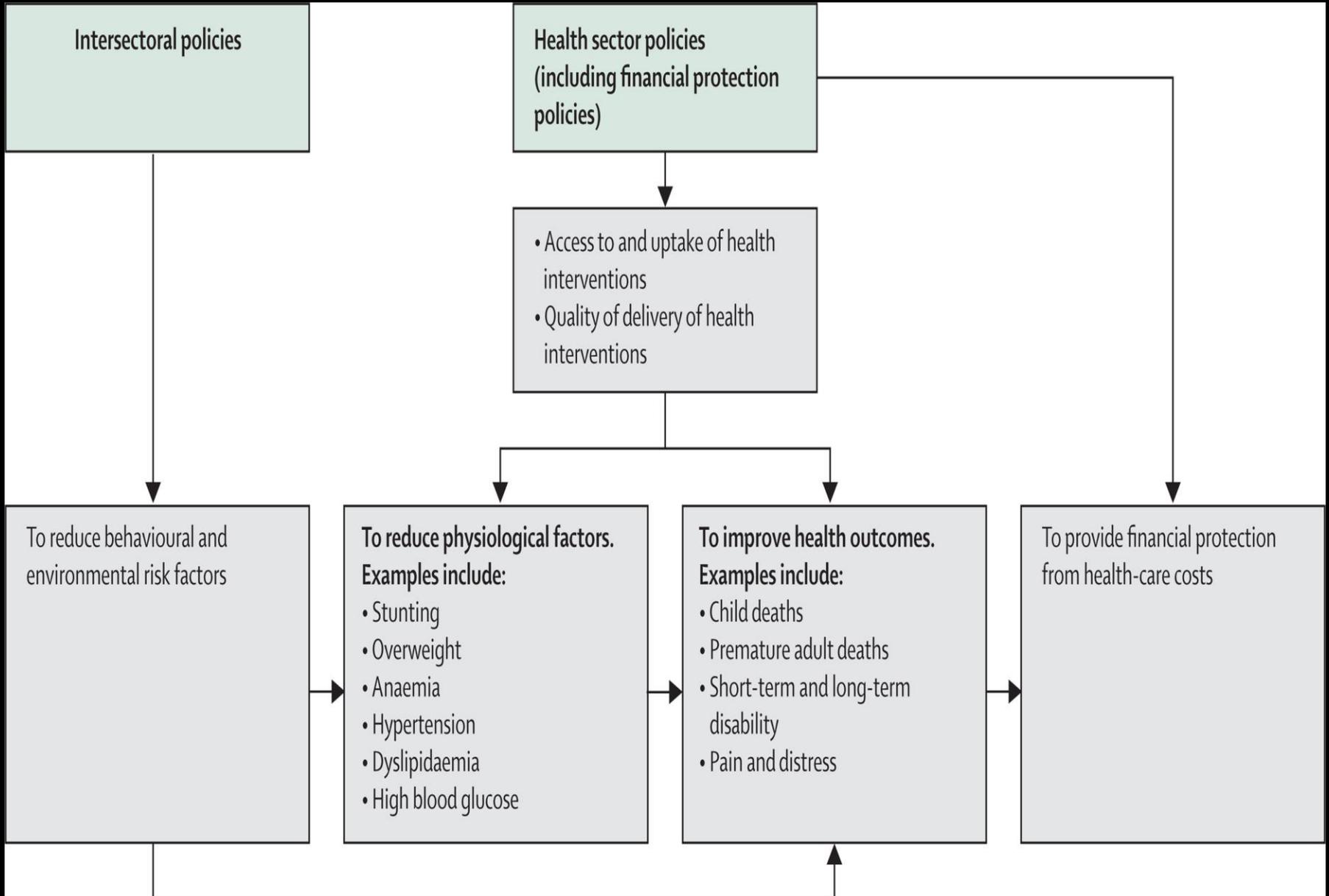
non-communicable diseases in Mexico and introduced the concept of a protracted epidemiological transition involving a dual burden of non-communicable diseases combined with significant lingering problems of infectious disease.^{5,6} The dual burden paradigm remains valid to this day. The World Bank's first (and only) World Development Report about health provided the first assessment of the global burden of disease, an assessment that underlined the importance of non-communicable diseases, which was consistent with subsequent assessments of global disease burden. It then drew heavily on findings from DCP1 to conclude that a number of specific interventions against non-communicable diseases (including tobacco control and multidrug

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Figure 1



Panel 3: Clusters of essential packages^a

Age-related cluster (packages 1–5)

- 1 Maternal and newborn health
- 2 Child health
- 3 School-age health and development
- 4 Adolescent health and development
- 5 Reproductive health and contraception

Infectious diseases cluster (packages 6–10)

- 6 HIV and sexually transmitted infections
- 7 Tuberculosis
- 8 Malaria and adult febrile illness
- 9 Neglected tropical diseases
- 10 Pandemic and emergency preparedness

Non-communicable disease and injury cluster (packages 11–17)

- 11 Cardiovascular, respiratory, and related disorders
- 12 Cancer
- 13 Mental, neurological, and substance use disorders
- 14 Musculoskeletal disorders
- 15 Congenital and genetic disorders
- 16 Injury prevention
- 17 Environmental improvements

Health services cluster (packages 18–21)

- 18 Surgery
- 19 Rehabilitation
- 20 Palliative care and pain control
- 21 Pathology

^aCountry applications will define packages in a way relevant to local policy. For example, the structure here distributes urgent interventions across packages, but in many contexts defining an emergency care package might prove more relevant.

	Lancet Commission on Investing in Health ^a	DCP3 ^{b,c,d}	WHO 2017 ^e
Countries included	34 low-income and three (large) lower-middle-income countries ^f	34 low-income and 49 lower-middle-income countries ^g	67 low-income, lower-middle, and upper-middle-income countries individually estimated and then aggregated ^h
Key definitions and intervention range covered	Grand convergence interventions lead to very substantial cross-country convergence in under-5, maternal, tuberculosis, malaria, and HIV/AIDS mortality and in the prevalence of neglected tropical diseases.	21 packages (table 1) identified in terms that include intersectoral and health sector interventions: (72 distinct intersectoral interventions and 244 distinct health sector interventions); EUHC are health sector interventions in the 21 packages (covered in national health accounts and potentially included in benefits packages); a highest priority subset of EUHC (HPP) includes a limited range of interventions against non-communicable diseases, injuries, and cross-cutting areas such as rehabilitation and palliative care, in addition to the grand convergence interventions	Investments were modelled for 16 SDGs, including 187 health interventions and a range of health-system strengthening strategies (the latter of which included investments required to achieve target levels of health workforce, facilities, and other health-system building blocks); two scenarios were modelled, a progress scenario (in which coverage is limited by the absorptive capacity of current systems to incorporate new interventions), and an ambitious scenario (in which most countries achieve high levels of intervention coverage and hence SDG targets)
Intersectoral action for health	Extensive discussion of intersectoral actions for health but not included in modelling grand convergence	Intersectoral interventions defined as those typically managed and financed outside the health sector; each of the 21 packages contains the intersectoral interventions deemed relevant; the costs and effects of intersectoral action on mortality reduction are not explicitly modelled	WHO 2017 scenarios include some finance of intersectoral interventions from the health-sector perspective, as well as their effects on mortality
Intervention coverage	Full coverage defined as 85%; rates of scale-up defined using historical data on so-called best performers among similar groups of countries	Full coverage defined as 80%; the HPP differs from EUHC not in coverage level but in the scope of interventions included	Full coverage defined as 95% for most interventions in the ambitious scenario, with a range from 53% to 99% depending on intervention
Estimated additional costs (including requisite investment in health system capacity)			
Low-income countries	US\$(2011)30 billion annually between 2016 and 2030	HPP: US\$(2012)32 billion in 2030; EUHC: US\$(2012)70 billion in 2030	US\$(2012)64 billion in 2030
Lower-middle-income countries	US\$(2011)61 billion annually between 2016 and 2030	HPP: US\$(2012)97 billion in 2030; EUHC: US\$(2012)190 billion in 2030	US\$(2012)185 billion in 2030
Estimated deaths averted ^{h,i,j}			
Low-income countries	4.5 million deaths averted per year between 2016 and 2030	2.0 million deaths averted in 2030	2.9 million deaths averted in 2030
Lower middle-income countries	5.8 million deaths averted per year between 2016 and 2030	4.2 million deaths averted in 2030	6.1 million deaths averted in 2030
Benefit cost analysis undertaken	Yes	No	No

EUHC=essential universal health coverage. HPP=highest priority package. SDGs=Sustainable Development Goals. ^aSeparate estimates for the low-income and lower-middle-income country groups are provided. ^bReported results are for all included countries combined. ^cDCP3 reports the number of premature deaths averted (ie, deaths younger than 70 years). ^dAverted deaths included stillbirths averted in the reports by the Lancet Commission on Investing in Health^h and WHO^h but not in DCP3.^{g,i,j} (In the Lancet Commission report^h and DCP3, the reported deaths averted included only deaths averted in children actually born and women actually giving birth. Family planning averts unwanted pregnancies and hence potential deaths of women and children that would have occurred as a result of those averted pregnancies. The difference is large. For low-income countries, results of a sensitivity analysis in Global Health 2035^h showed that the more comprehensive estimate was 7.5 million deaths averted rather than the 4.5 million deaths averted shown in this table. WHO's 2017 estimates^h of deaths averted are based on the larger and more inclusive number. A ambitious scale-up of family planning services accounted for 50% of averted child and maternal deaths and more than 65% of averted stillbirths in the WHO analysis (Stenberg K, Department of Health Systems Governance and Financing, WHO, personal communication). Sources: Jamison et al (2013);^h Boyle et al (2015);ⁱ Watkins et al (2007);^j Watkins et al (2007);^k and Stenberg et al (2017).^l

Table 4- Costs and consequences of large-scale investment in health systems by the Lancet Commission on Investing in Health, Disease Control Priorities, 3rd edition (DCP3), and WHO

A key element of universal
health coverage:

access to essential
medicines

**WORLD TRADE
ORGANIZATION**

WT/MIN(01)/DEC/1
20 November 2001

(01-5859)

**MINISTERIAL CONFERENCE
Fourth Session
Doha, 9 - 14 November 2001**

MINISTERIAL DECLARATION

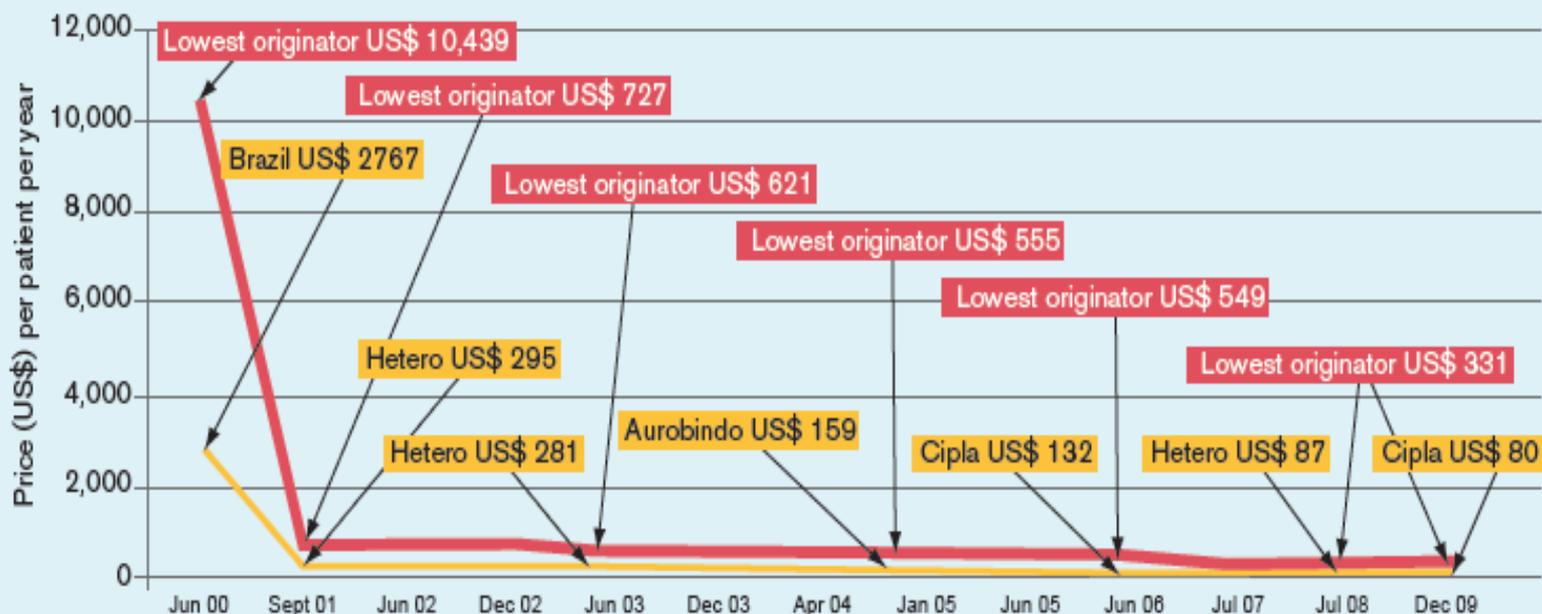
Adopted on 14 November 2001

- “Each member has the right to grant compulsory licences and the freedom to determine the grounds upon which such licences are granted” and
- “to determine what constitutes a national emergency or other circumstances of extreme urgency”.
- Public health crises include “those relating to HIV/AIDS, tuberculosis, malaria and other epidemics” and “other circumstances of extreme urgency”.

Box 4: Access to medicines and the Doha Declaration on TRIPS and Public Health

Measuring access to medicines is a complex task, but price is one key factor among others. The Doha Declaration on TRIPS and Public Health recognized concerns about effects on prices while noting the need for innovation. Since the Declaration was adopted in 2001, prices for many treatments have fallen significantly, in part due to generic competition and tiered pricing schemes (see graph below). Surveys also show a marked increase in the use of TRIPS flexibilities to promote access to medicines.

Falling prices of first-line combinations of some first-line anti-retroviral therapies for HIV-AIDS since 2000



Source: Extract from MSF, *Untangling the Web of Price Reductions*, January 2010 at <http://www.msfaaccess.org>.

Access to medicines: lessons from the HIV response

Just two decades ago, HIV/AIDS treatments were prohibitively expensive and accessible in only a few affluent countries. But remarkable reductions in costs have enabled treatment expansion that has reduced mortality and transmission. Today, first-line HIV drugs cost less than US\$100 per person per year, a 99% reduction from more than \$10 000 in 2000. The number of people receiving HIV treatment doubled in just 5 years, from 9 million in 2011 to more than 18 million today.¹

In a world facing growing inequalities, the HIV response has lessons for low and middle-income countries (LMIC)—but also for high-income countries—on access to care and treatment for communicable diseases and for non-communicable chronic diseases, a global pandemic that dwarfs the HIV epidemic in scale.²

The transformative power of the HIV response was underpinned by moral rather than technical arguments. A unique coalition of activists, scientists, celebrities, and religious and community leaders from all over the world argued that no one should be denied life-saving treatment because of area of residence or income. The moral imperative was operationalised by activism for more urgent drug discovery, regulatory approval, and voluntary and compulsory licensing, followed by shifts towards large-scale generic production. Economies of scale underpinned a drive towards more efficient, cheaper production, and drove prices down. Major donors such as the Global Fund to Fight AIDS, Tuberculosis, and Malaria and the US President's Emergency Plan for AIDS Relief bought generic drugs. The Clinton Health Access Initiative negotiated price-volume discounts



The concept of “public goods”

non exclusive: anyone can use them

non competitive: their use do not limit others to use them



Progress of medicine and essential drugs shall be considered as global public goods and be accessible to all human beings living on our planet



ITALIAN CENTER FOR **GLOBAL HEALTH**

FIGHTING HEALTH INEQUALITIES

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