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Strategy Development: Landscape Analysis - Broader Health and Development

VERSION: 29 MAY 2020


Broader Health and Development Landscape

Global Fund Strategy Development

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COVID-19 is radically altering global health, politics and economics, and the impact upon programs fighting HIV, TB and malaria will likely be tremendous. These slides summarize trends that preceded COVID-19, but which are likely to continue and be exacerbated by the pandemic.

Summary of Global Fund achievements



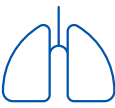
32
MILLION

LIVES SAVED THROUGH THE
GLOBAL FUND PARTNERSHIP




18.9
MILLION

PEOPLE ON ANTIRETROVIRAL
THERAPY FOR HIV IN 2018



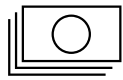
5.3
MILLION

PEOPLE WITH TB TREATED
IN 2018



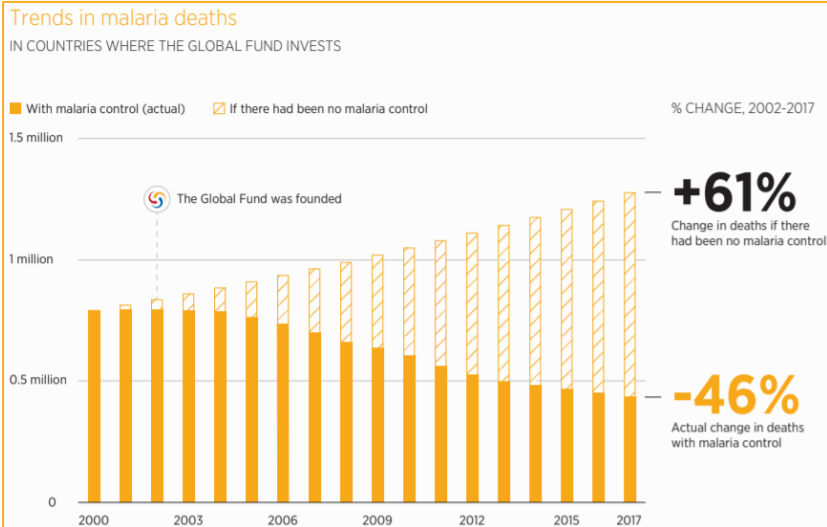
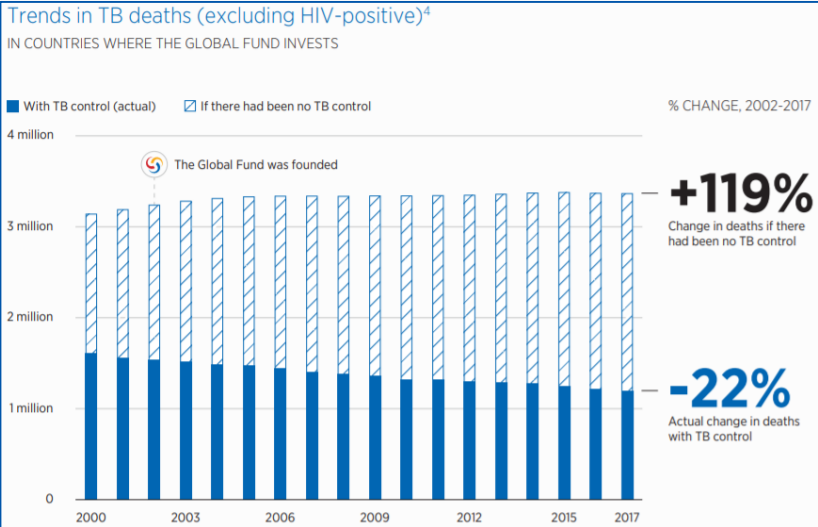
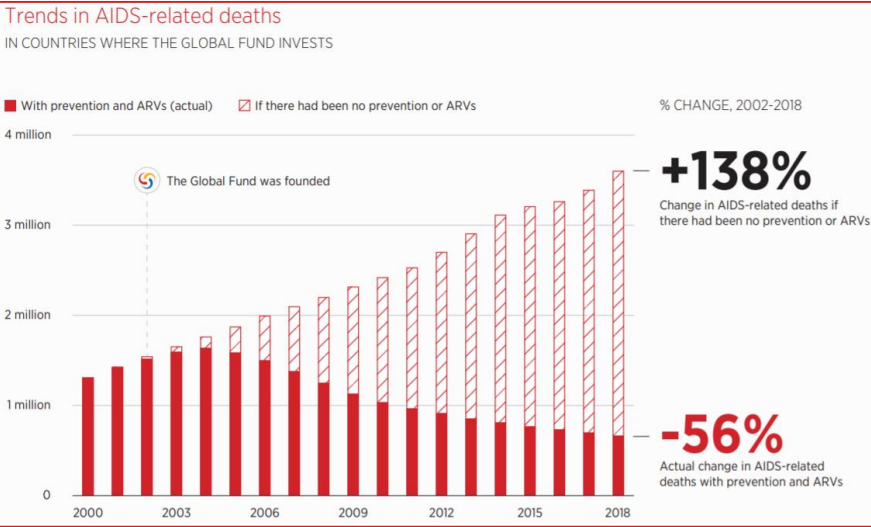
131
MILLION

MOSQUITO NETS DISTRIBUTED
IN 2018



44.5
BILLION

US\$ DISBURSED AS OF
APRIL 2020



Working with governments, civil society, communities affected by the diseases, technical partners, the private sector, faith-based organizations, and other funders, the Global Fund partnership has saved 32 million lives since 2002.

1. Road to 2030

The Global Fund's role in achieving the Sustainable Development Goals by 2030



SDG3.3: Fight communicable diseases

By 2030, **end the epidemics of AIDS, tuberculosis, malaria** and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.

SDG3.8: Achieve universal health coverage

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.



SDG1: End poverty in all its forms everywhere. Investments by the Global Fund alleviate the financial burden that the three diseases place on individuals and governments, thus freeing up resources to devote to other key drivers of health outcomes.



SDG4: Ensure inclusive and equitable quality education. Investments by the Global Fund enable children and young adults to seek and pursue education and reach their full potential in a world free of HIV, TB and malaria and with the support of strong health systems.



SDG5: Achieve gender equality and empower all women and girls. Investments by the Global Fund are used to support prevention interventions targeted to women, girls and trans individuals, including those that aim to decrease gender-based violence and increase women's and gender-diverse individuals' relational power.



SDG10: Reduce inequality within and among countries. Investments by the Global Fund are based on country economic capacity and disease burden, and used to support key populations disproportionately affected by the three diseases.



SDG16: Peace, justice and strong institutions. Investments by the Global Fund support inclusive, multi-stakeholder engagement in health-related decision-making as well as strengthen the ability of civil society groups to hold their governments accountable through advocacy and community-based monitoring.



SDG17: Revitalize the Global Partnership for Sustainable Development. The Global Fund will continue to operate based upon its model of inclusive partnership, with individuals, countries, and other institutions, and elevate human rights to an explicit strategic priority.

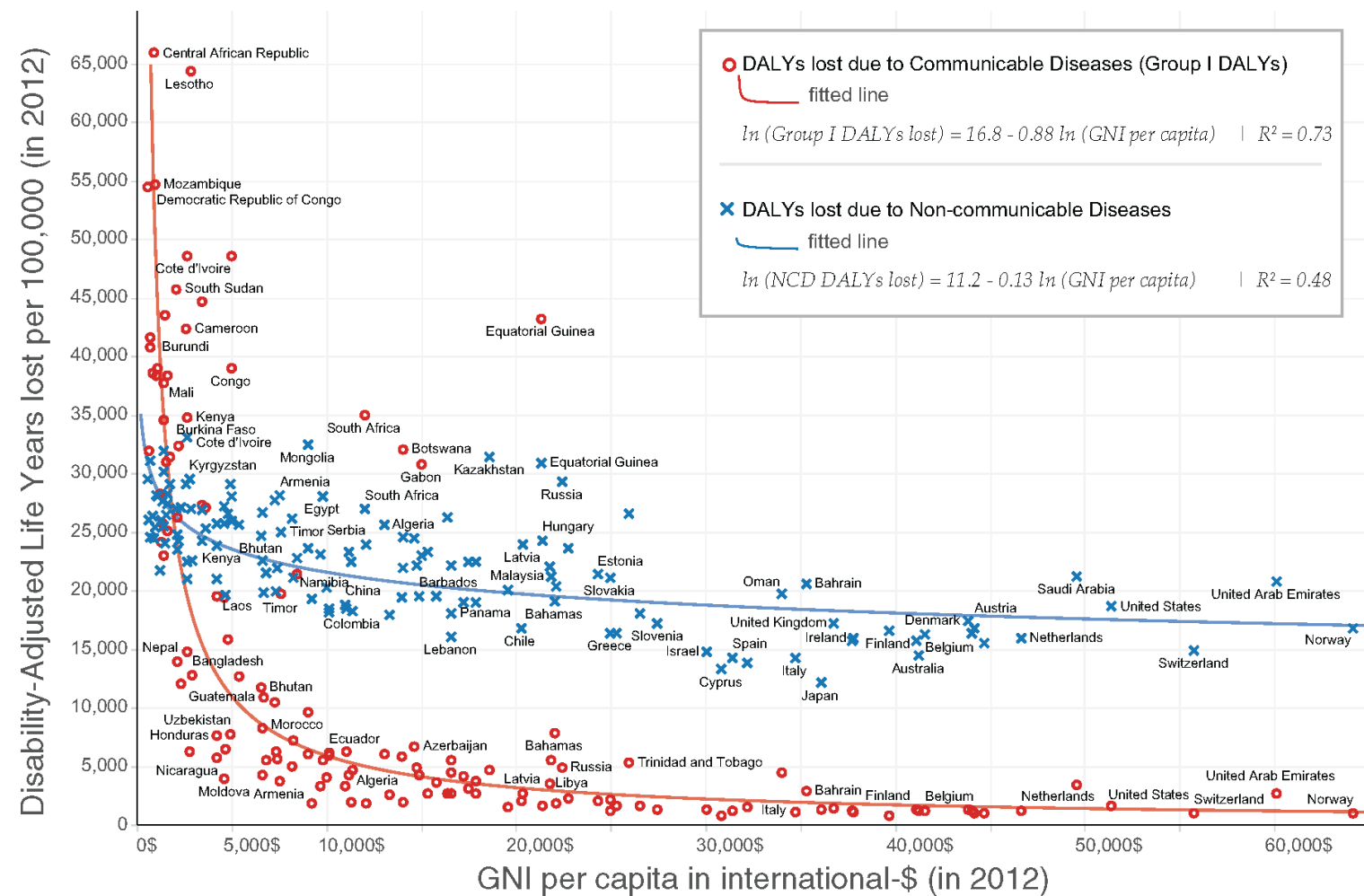
The Global Fund partnership plays a key role in achieving the SDGs, promoting and protecting health as the foundation of sustainable development.

2. Global Burden of Disease

Infectious disease

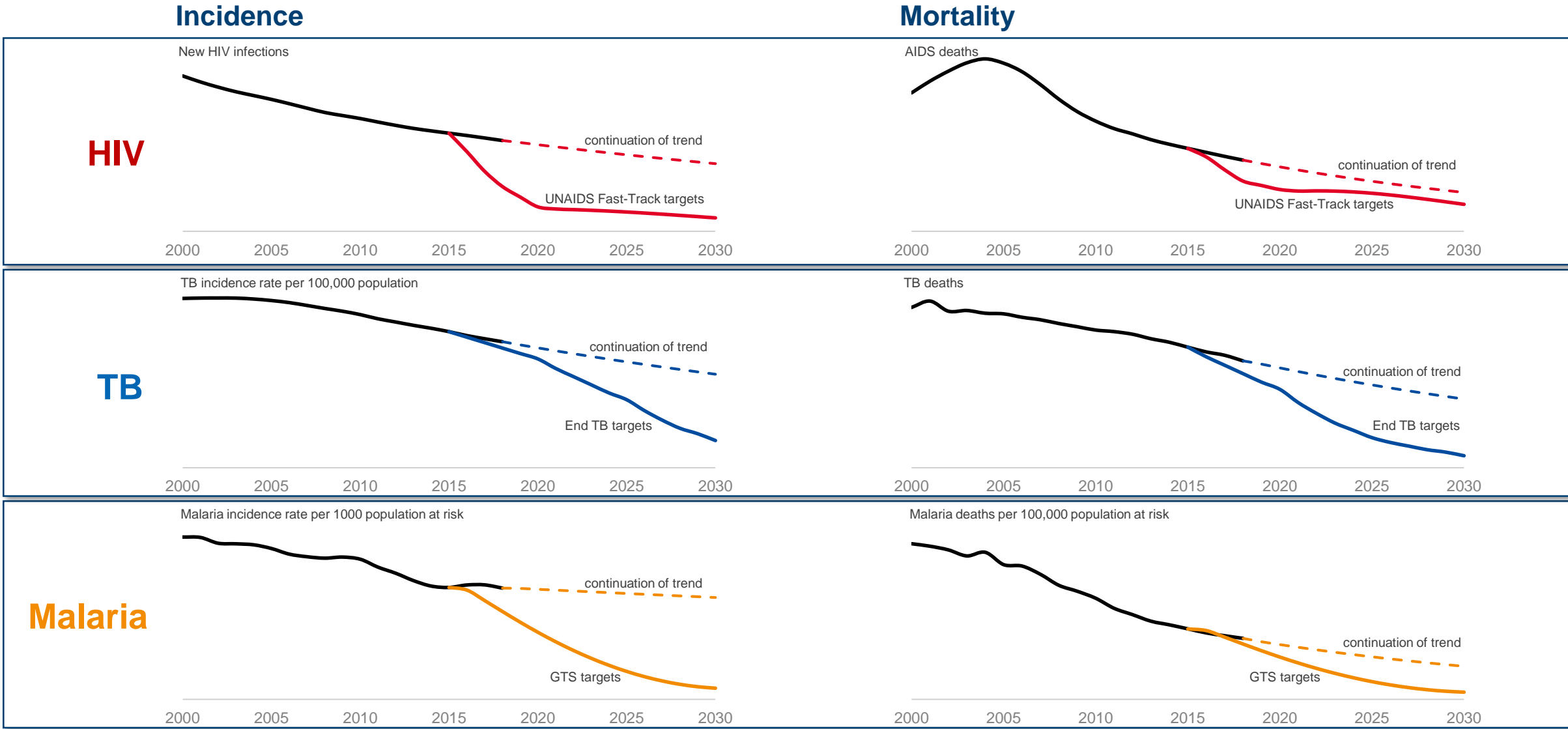
- Infectious disease outbreaks, and the public health interventions employed to subdue them, have profoundly shaped human history.
- In 1990, communicable diseases caused 33% of deaths; significant progress has reduced this share to 18% by 2017.
- Lower income countries face a significantly greater mortality and morbidity burden from infectious disease than countries with higher national income.
- HIV, TB, malaria, neglected tropical diseases (NTDs) and viral hepatitis affect billions of people around the world, and together cause more than 4 million deaths each year.
- TB is the biggest infectious disease killer worldwide, accounting for 1.45 million deaths in 2018.
- 770,000 people died from HIV in 2018.
- Malaria deaths in 2018 amounted to 405,000, predominantly children in sub-Saharan Africa.

Disability-Adjusted Life Years (DALYs) lost to communicable and non-communicable diseases, by national income



The burden of infectious diseases is much higher in poorer countries.

HIV/AIDS, TB and malaria: progress 2000-2018; projections to 2030

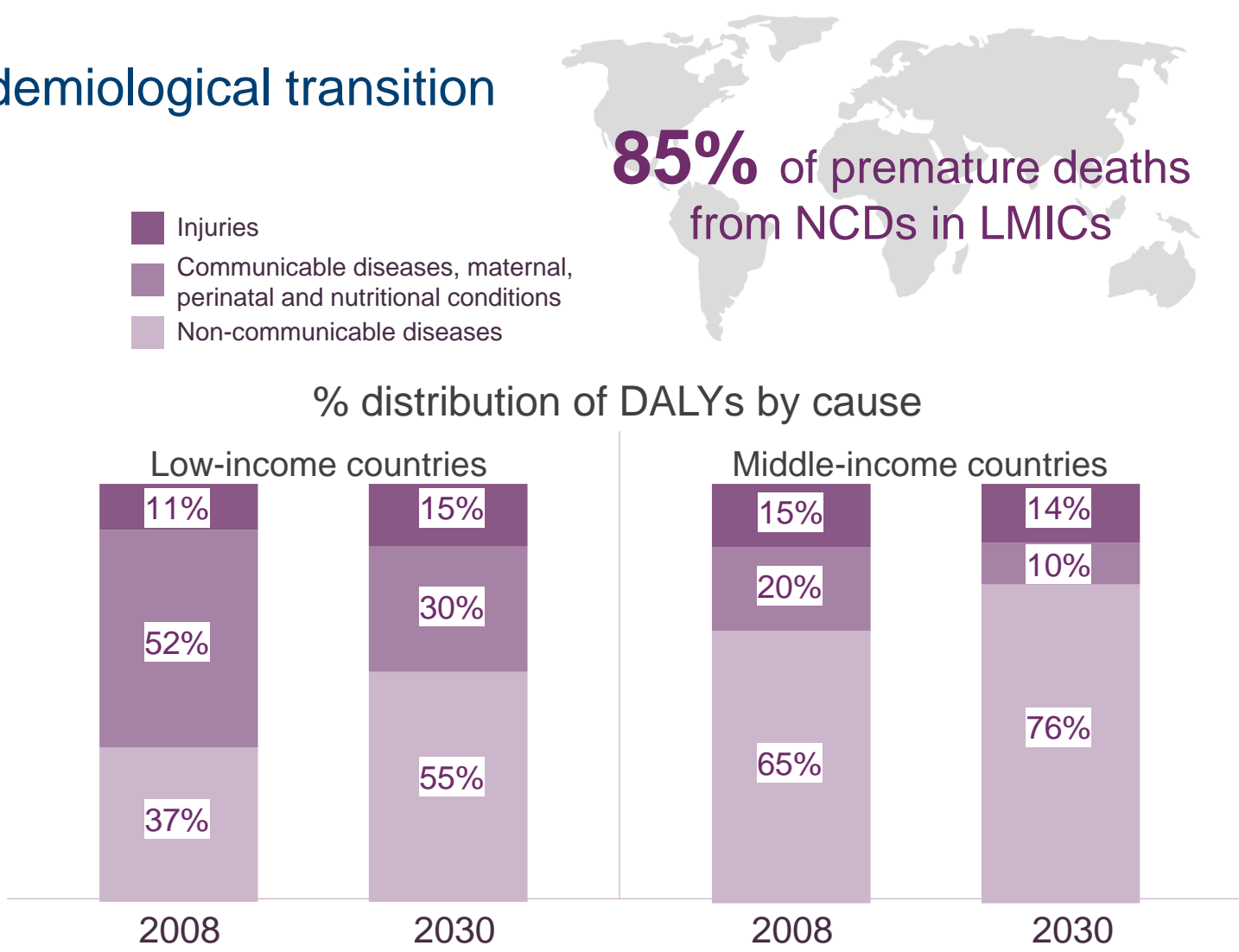


Source: internal Global Fund analysis using partner (UNAIDS, WHO) data. Projected continuation of recent trend is based on fitting a linear (where the trend is increasing) or exponential (where declining) fit of the past 6 years (2013-2018) to project 2019-2030, assuming that the pace of program implementation continues as it has over the last 6 years without significant improvement or deterioration.

Mortality of the three big killer epidemics has declined faster than incidence; yet none are on track to reach global targets on incidence and mortality by 2030.

Non-communicable disease and the epidemiological transition

- Looking towards the 2030 horizon, the world is expected to see an **epidemiological transition from communicable diseases to non-communicable diseases (NCDs)** as the major driver of disease burden globally. However, this shift might be **reversed or delayed** as a result of the ongoing **COVID-19** pandemic.
- In LMICs, NCDs will cause three times more DALYs and five times more deaths than communicable diseases by 2030.
- More than 80% of premature deaths from NCDs are caused by four groups of diseases: cardiovascular disease, cancers, respiratory disease and diabetes.
- Comorbidities** associated with HIV/AIDS, TB and malaria are expected to increase as **populations age**, e.g. burden of NCDs among aging people living with HIV; increased TB risk among people living with diabetes.
- The global burden of mental health disorders continues to grow and accounts for a significant proportion of morbidity and mortality worldwide. In LMICs, 76-95% of people with mental illness do not receive treatment for their condition.



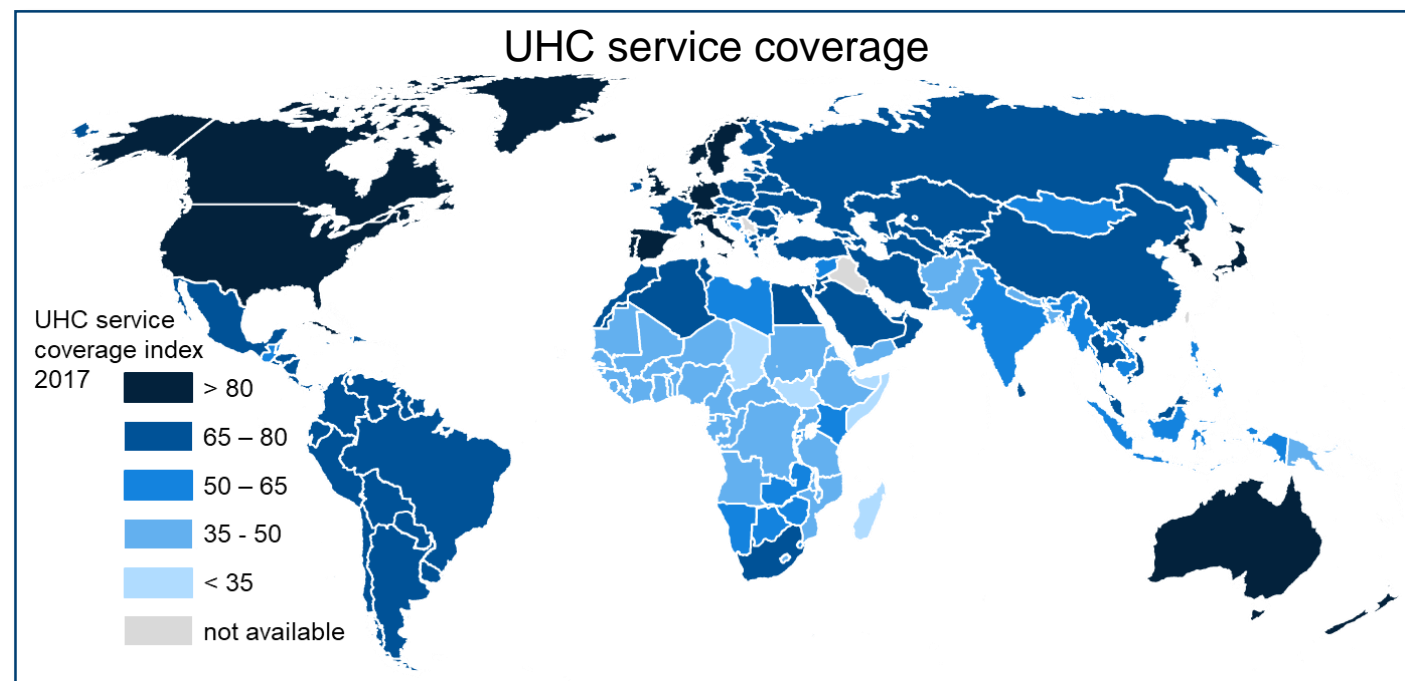
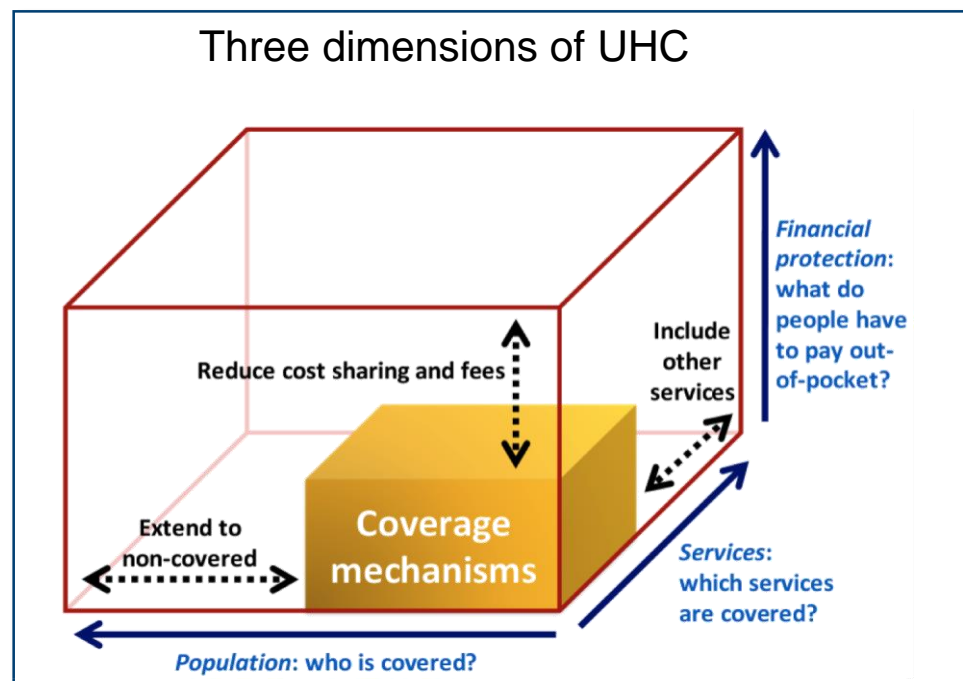
Global Fund-supported countries are expected to undergo an epidemiological transition towards a predominant disease burden arising from non-communicable rather than communicable diseases.

Sources: World Bank - Health, Nutrition and Population, World Health Organization
NCDs = Non-communicable diseases, CDs = Communicable diseases, DALYs = disability-adjusted life years, LMICs = low- and middle-income countries

3. Systems for Health

Universal health coverage: three dimensions of health and care

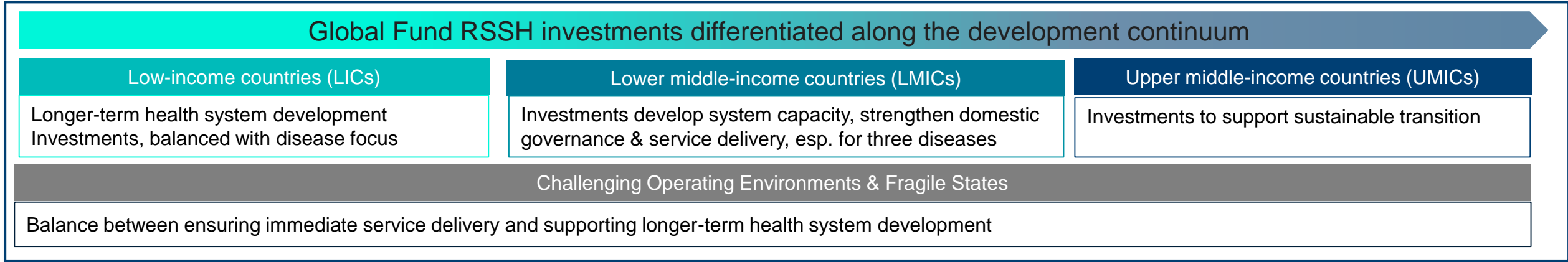
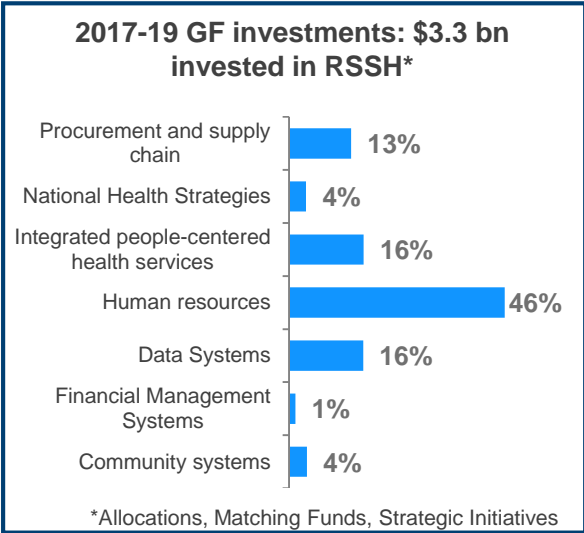
- Universal health coverage (UHC) means that all individuals and communities receive the preventive, curative, rehabilitative and palliative health services they need without suffering financial hardship.
- Over half of the world's population does not have full coverage of health services.
- The Global Fund invests in all three dimensions of UHC (service expansion, improved coverage, financial protection).
- The level of UHC service coverage is generally low across Global Fund implementing countries (with exceptions in the Asia and Pacific region).



The Global Fund must help countries deliver UHC while simultaneously reducing the impact of three major infectious disease killers, seeking synergies with partners, adapt to local contexts and work in support of country leadership.

The Global Fund’s role in building resilient and sustainable systems for health (RSSH)

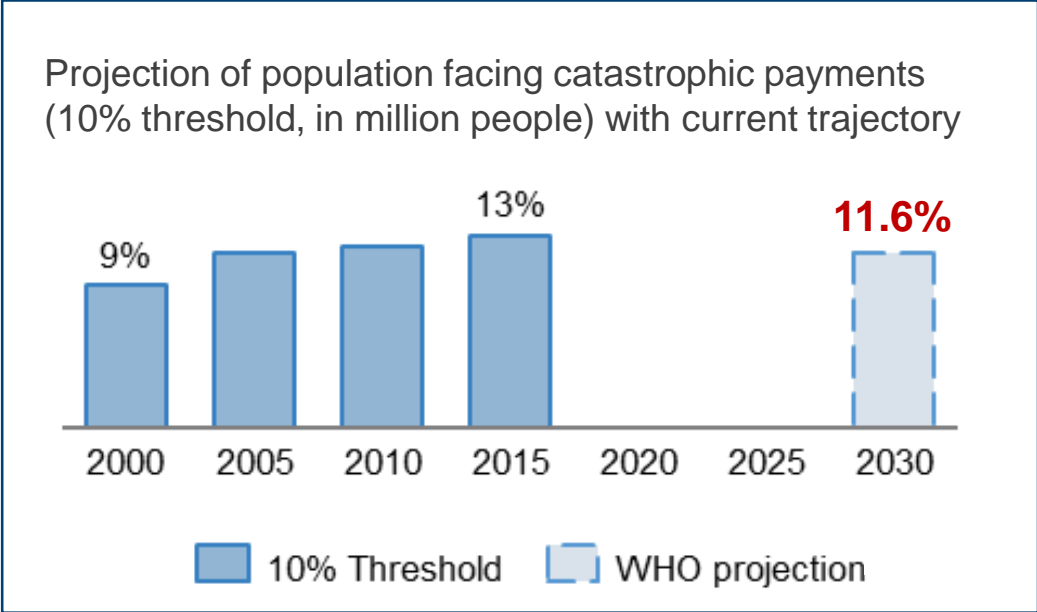
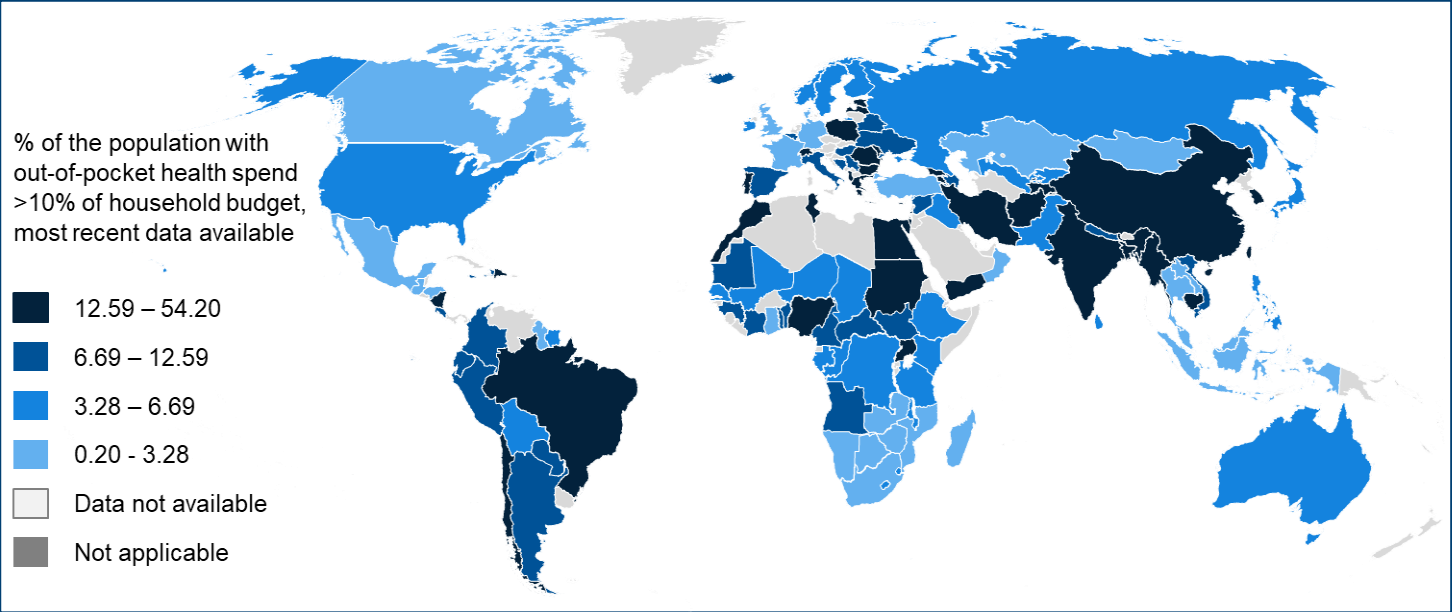
- The Global Fund currently invests more than US\$1 billion/year into health and community systems, making it the largest multilateral investor in sustainable systems for health.
- Global Fund RSSH investments are differentiated by context and designed to catalyze domestically sustainable impact.
- Strong systems for health are essential to improving HIV, TB and malaria outcomes, as well as achieving broader health outcomes and accelerating progress towards UHC.
- Community systems strengthening is a core component of RSSH. Community systems are critical to reaching the last mile. The Global Fund is a key funder of community systems and uniquely positioned to strengthen community responses.
- In high-burden middle-income countries, there is high care-seeking from the private sector. The Global Fund engages with the private sector to develop improved service delivery models.
- The availability of timely and stratified data is essential for decision making and to drive impact.
- UHC financing gaps are vast. The Global Fund, and DAH generally, make up only a small share of overall resources. Therefore, leveraging domestic resources is critical to improve service coverage, quality of care and financial protection.
- The Global Fund’s pooled procurement function can be leveraged to increase access to affordable quality-assured health products using domestic resources.



The Global Fund is the largest multilateral grant funder of health and community systems, investing in supply chains, data systems, health workforce, community responses and systems, and integrated people-centered service delivery.

Financial protection: a cornerstone of sustainable systems for health

- Financial protection in health is defined as the ability to obtain the health care services needed without experiencing financial hardship. Financial protection is both an enabler and consequence of UHC.
- Household health expenditures push 100 million people below the poverty line every year.
- There are more people facing catastrophic health expenditure in middle-income countries than low-income countries, and the largest concentration of people pushed below the poverty line due to health expenditures has also shifted from LICs to LMICs.
 - Proportion of the population spending >10% of household budget on out of pocket payments: 6.9% LICs, 14.5% LMICs, 14.8% in UMICs, 6.9% in HICs.
- Greater reliance on public spending on health is associated with a decreased incidence of catastrophic and impoverishing health spending, while there is no such association between private voluntary health insurance and financial protection indicators.

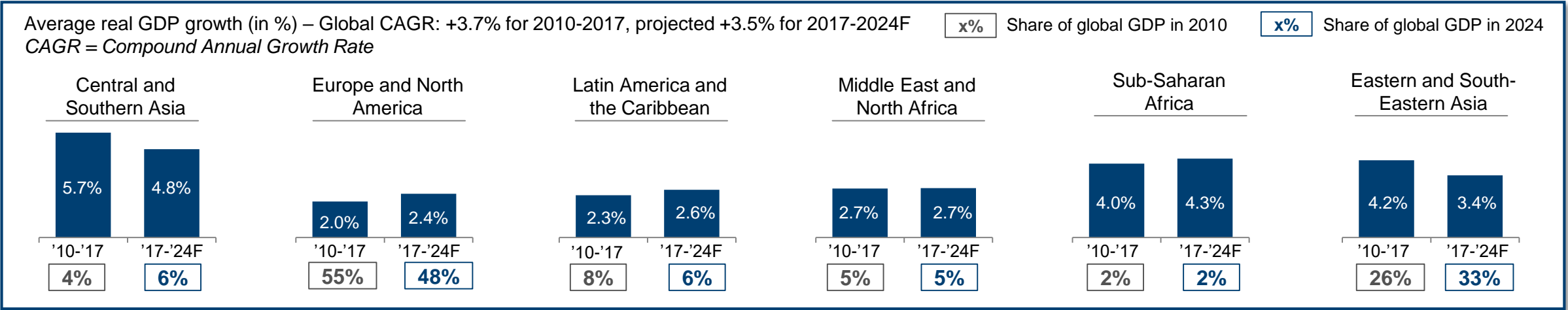


Ensuring financial protection is one of the dimensions of UHC, enabling individuals to seek the health services they need without compromising financial security and well-being.

4. Economic Landscape

Economic growth projections hampered by pandemic uncertainty and inclusivity concerns

- Economic growth was expected to continue in the coming years:



- However, the accuracy of pre-existing projections has been rendered highly uncertain:



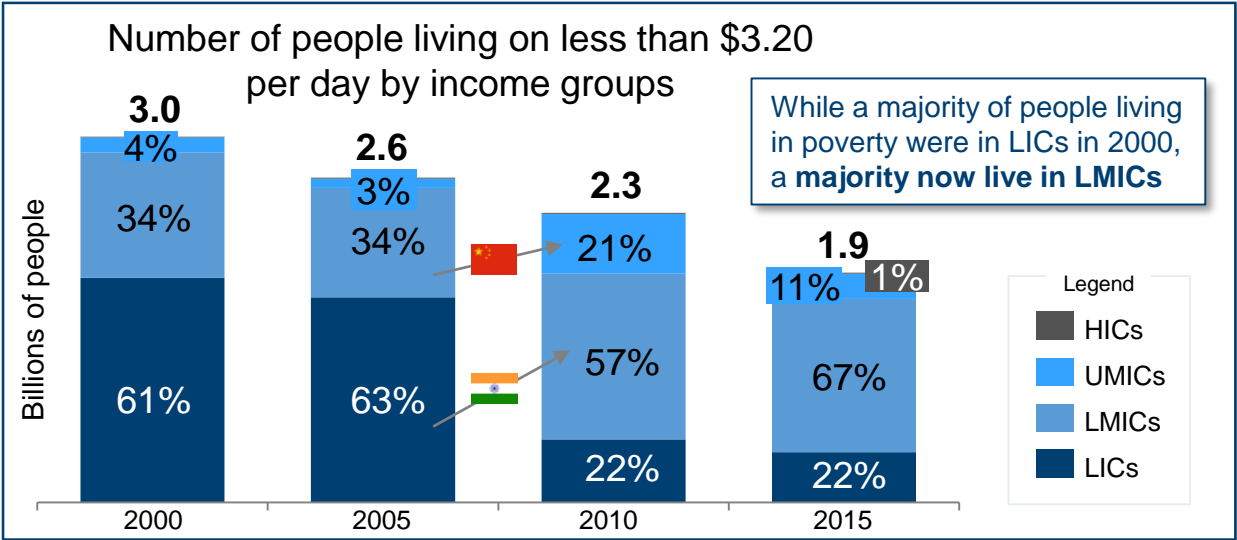
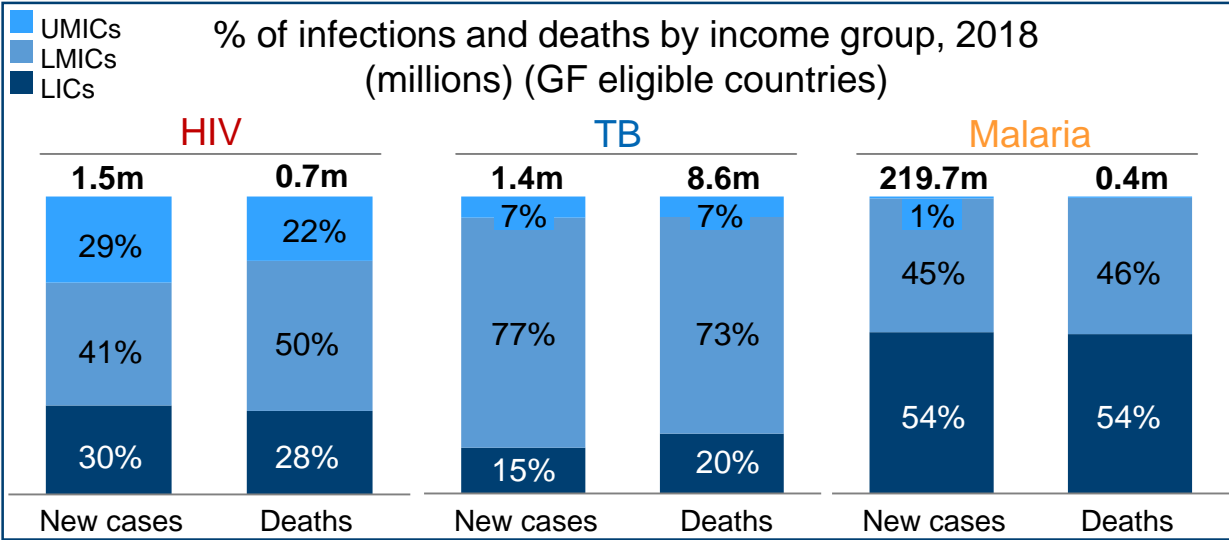
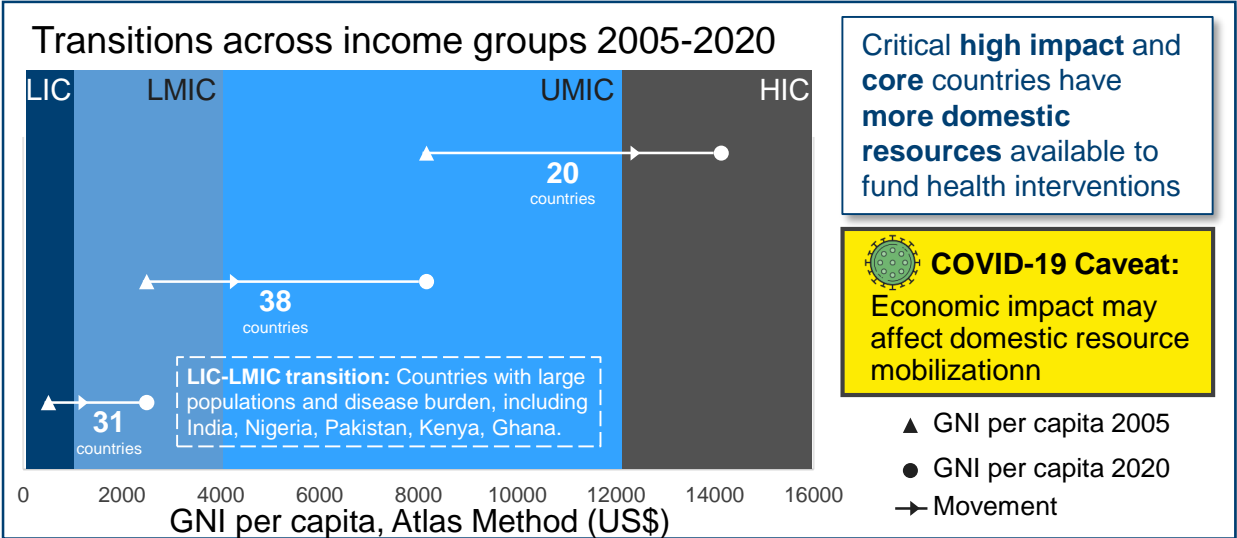
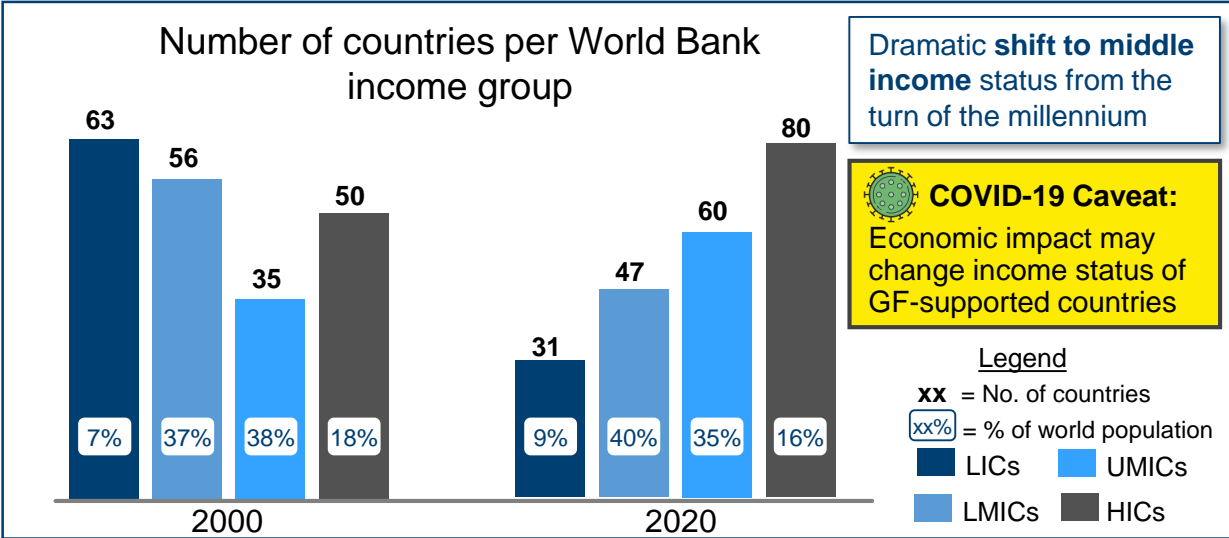
COVID-19 Caveat: The ongoing pandemic may cause significant and long-lasting disruptions of the global economy; scale and scope of disruption uncertain.

- And even with significant growth in GDP, prevailing in-country inequalities mean that economic growth may not be inclusive, and vulnerable populations may be left further behind.



Economic growth likely to increase domestic capacity to fund health, yet in-country inequality demands differentiated approach, and the ongoing COVID-19 pandemic will cause set-backs in forecasted economic growth.

Shift from LICs to MICs accompanied by disease and poverty burdens

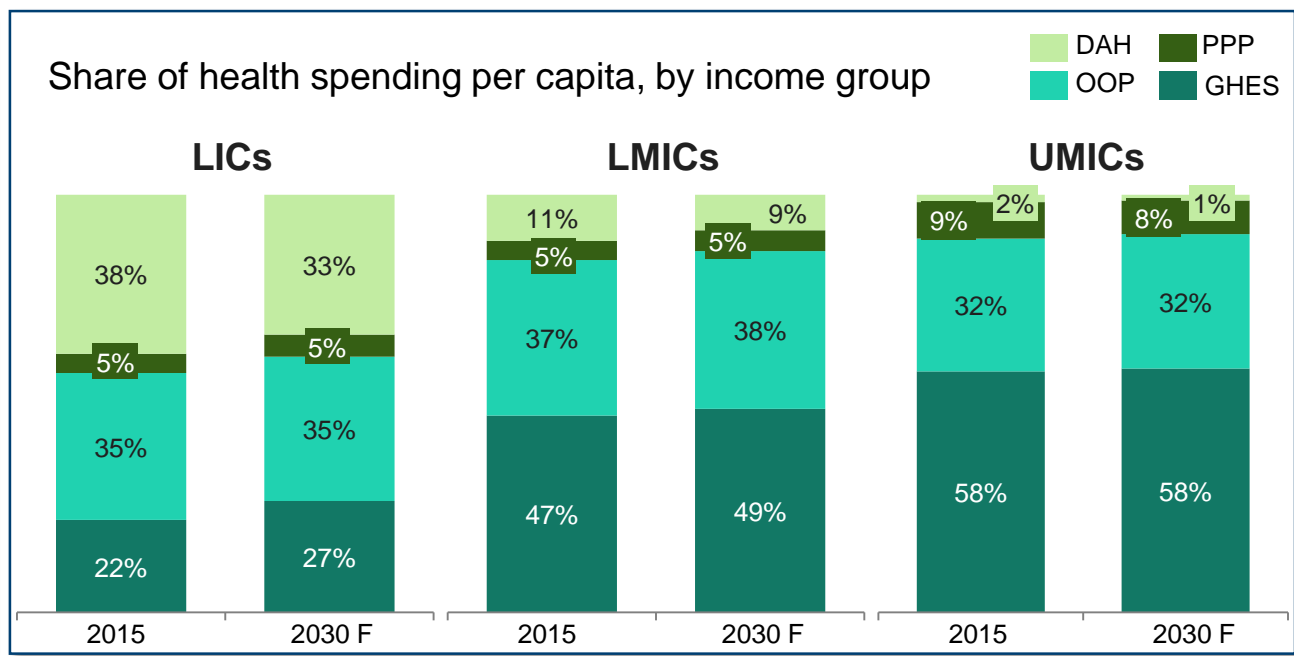
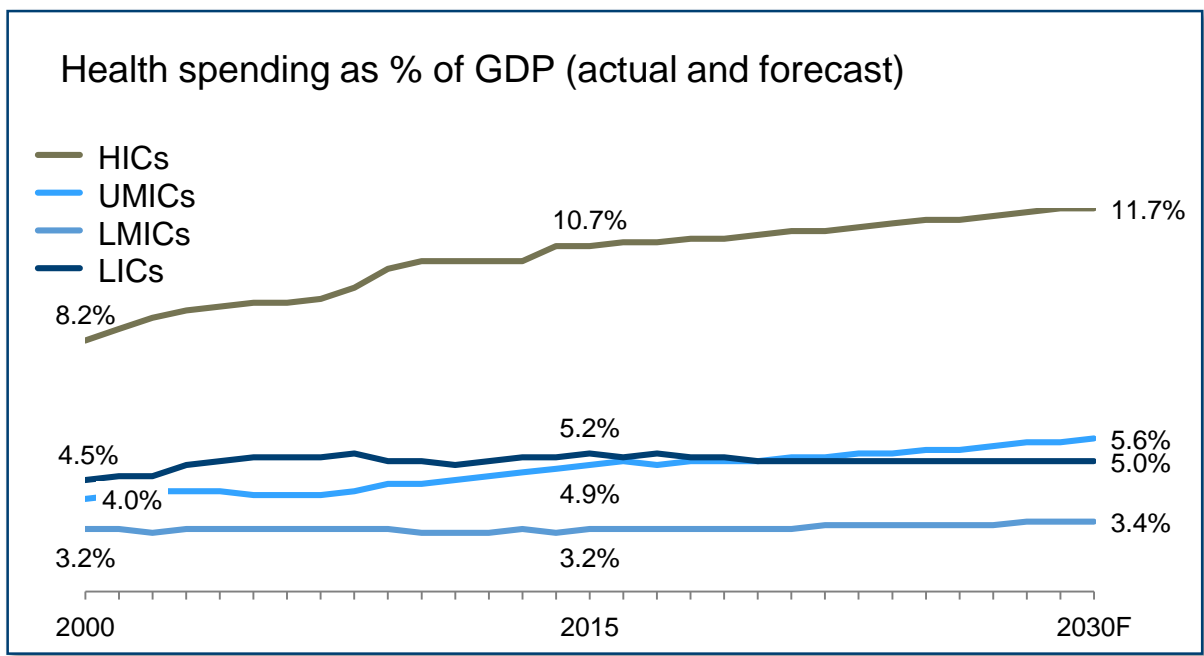


MICs account for large shares of disease burden and people living in poverty; supporting the effective collection and utilization of domestic funds is critical to achieve scale and sustainability of global health programs.

5. Funding for Health

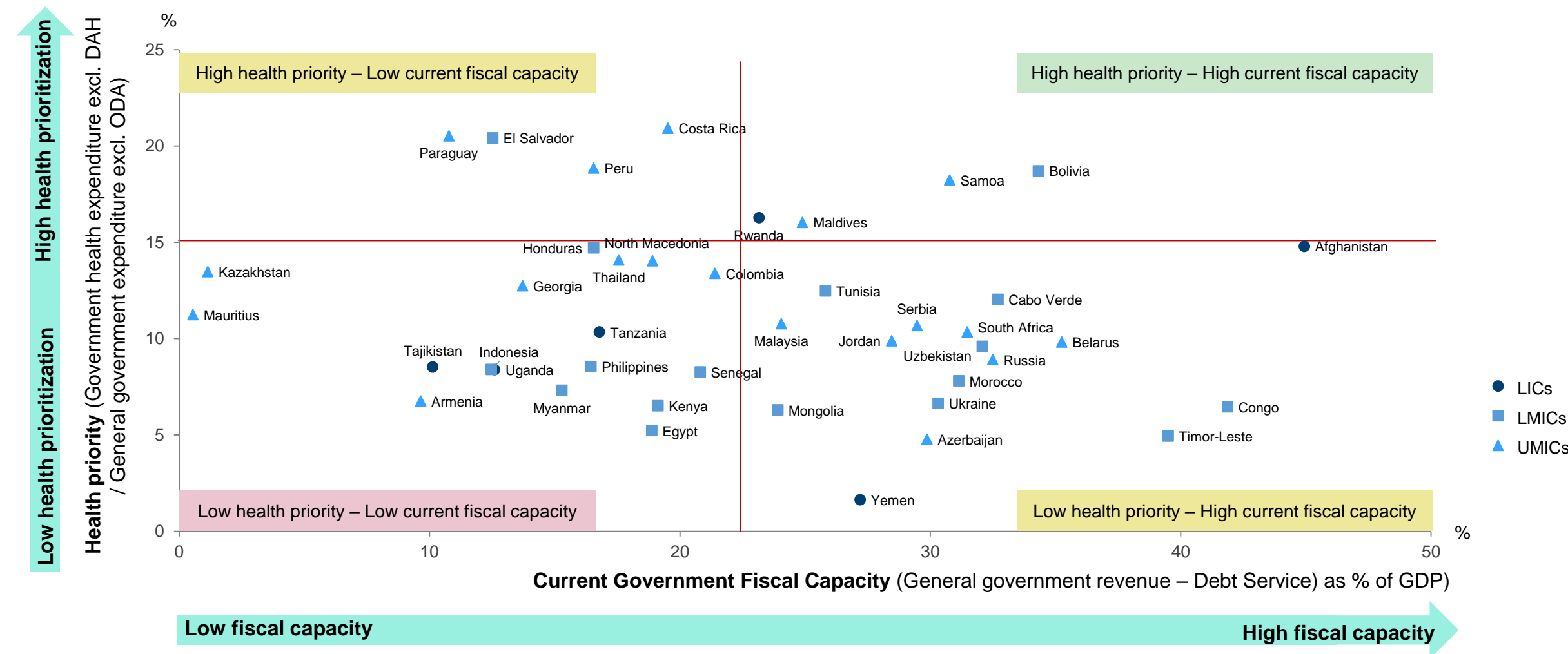
Total health spending: progression and projection

- Strong growth was predicted in total health spending – yet expected to remain below 6% of GDP in LICs/MICs. However, the impact of COVID-19 on countries’ fiscal capacity for domestic health expenditure, financial flows such as DAH, and the financial well-being of individuals to pay for health out-of-pocket may significantly impact health spending in the near future.
- DAH is playing an increasingly smaller role in health financing, but is projected to remain a significant share of health funding in LICs, where the majority of malaria burden lies.
- OOP spending is projected to remain high across income levels indicating the importance of health insurance mechanisms.



In a changing health financing landscape, the Global Fund must adjust to country-specific contexts and play a catalytic role to drive impact.

Health prioritization and fiscal capacity vary across countries and income groups



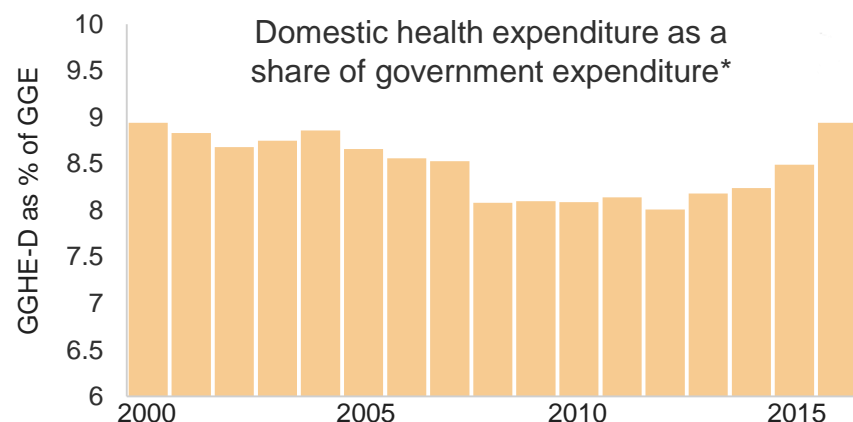
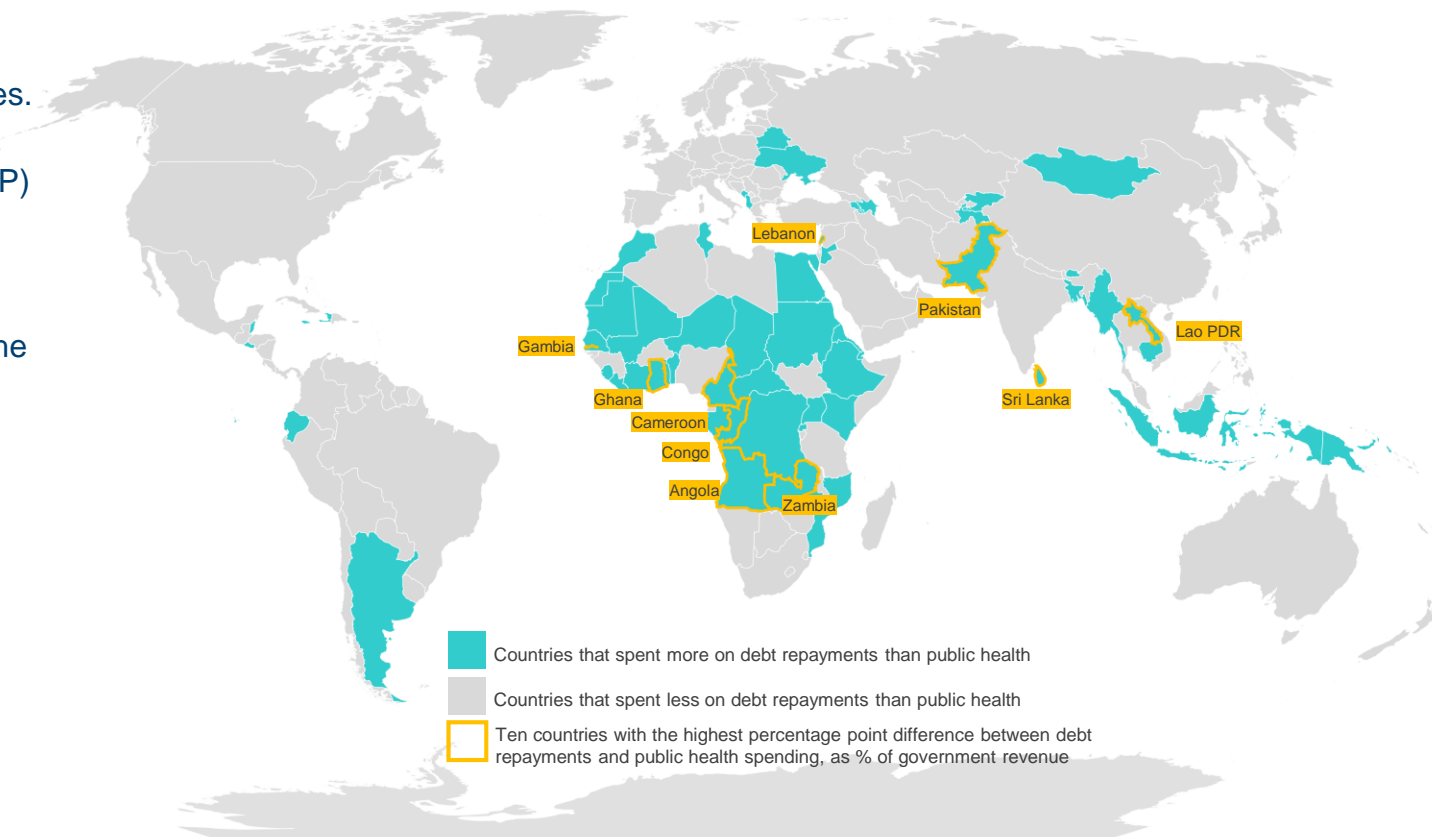
Countries have vastly different fiscal capacity and health prioritization, differentiated approaches to engagement with Ministries of Health and Finance and to domestic co-financing commitments will be required.

Note: as of most recent available data (2016-2018) – Global Fund eligible countries only for which consistent data is available
Source: IMF, IHME, World Bank

External debt to overcome public health crises not a one-size-fits-all approach

- More than a third of African countries are at risk of debt distress, with African GDP growth expected to halve as a result of COVID-19.
- Debt relief could be employed to free up liquidity for pandemic response and economic recovery.
- Domestic health expenditure, as a share of total government expenditure, has remained stable in Global Fund implementer countries.
- Tax revenue has grown back since the 2009/10 recession but remains lower than in 2000. LIC/MICs collect significantly less tax (as % of GDP) than HICs. Lower income countries are likely to remain reliant on external funding for their health systems.
- The COVID-19 pandemic is presenting significant and still unknown challenges to health systems and domestic resource mobilization, in the short-, medium- and long-term.

64 countries - 30 in Sub-Saharan Africa - that spent more on external government debt service in 2019 than on public healthcare




Many countries supported by the Global Fund spend more on debt repayments than public health, reducing countries' ability to fight COVID-19 and raising concerns about the further use of loans for health in specific contexts.

*123 countries on the Global Fund 2020 Eligibility List with annual data between 2000-2016 in the WHO Global Health Expenditure Database

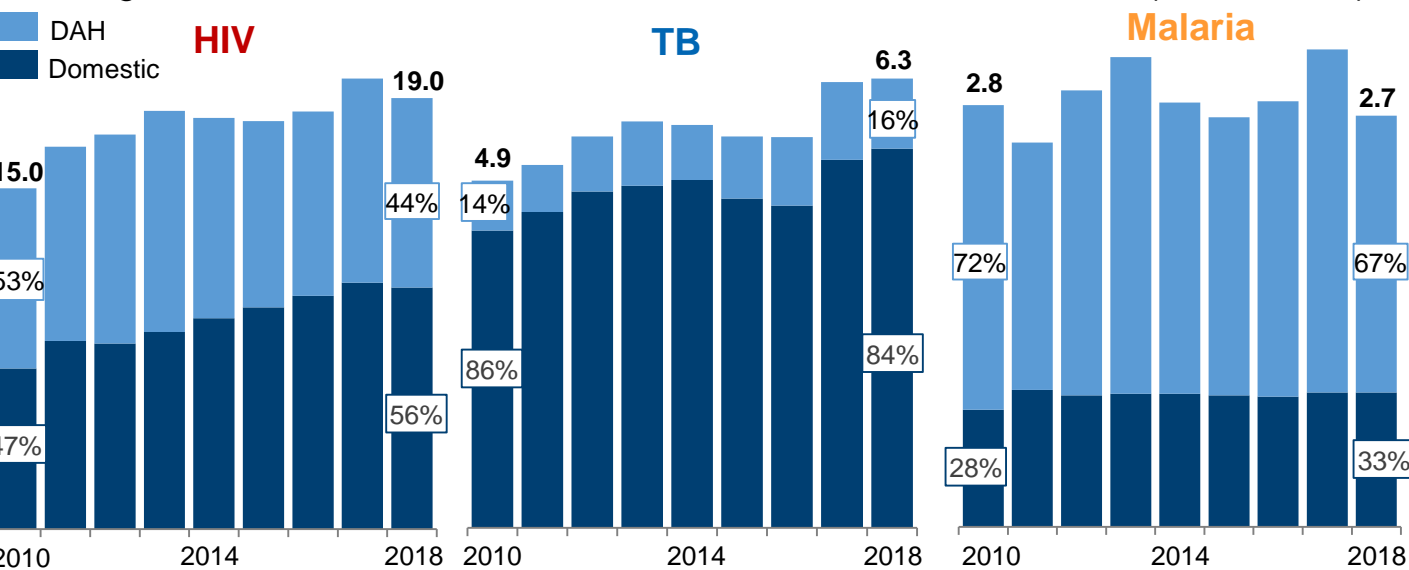
Sources: WHO Global Health Expenditure Database, Jubilee Debt Campaign, World Bank, African Union

Trends in Development Assistance for Health (DAH)

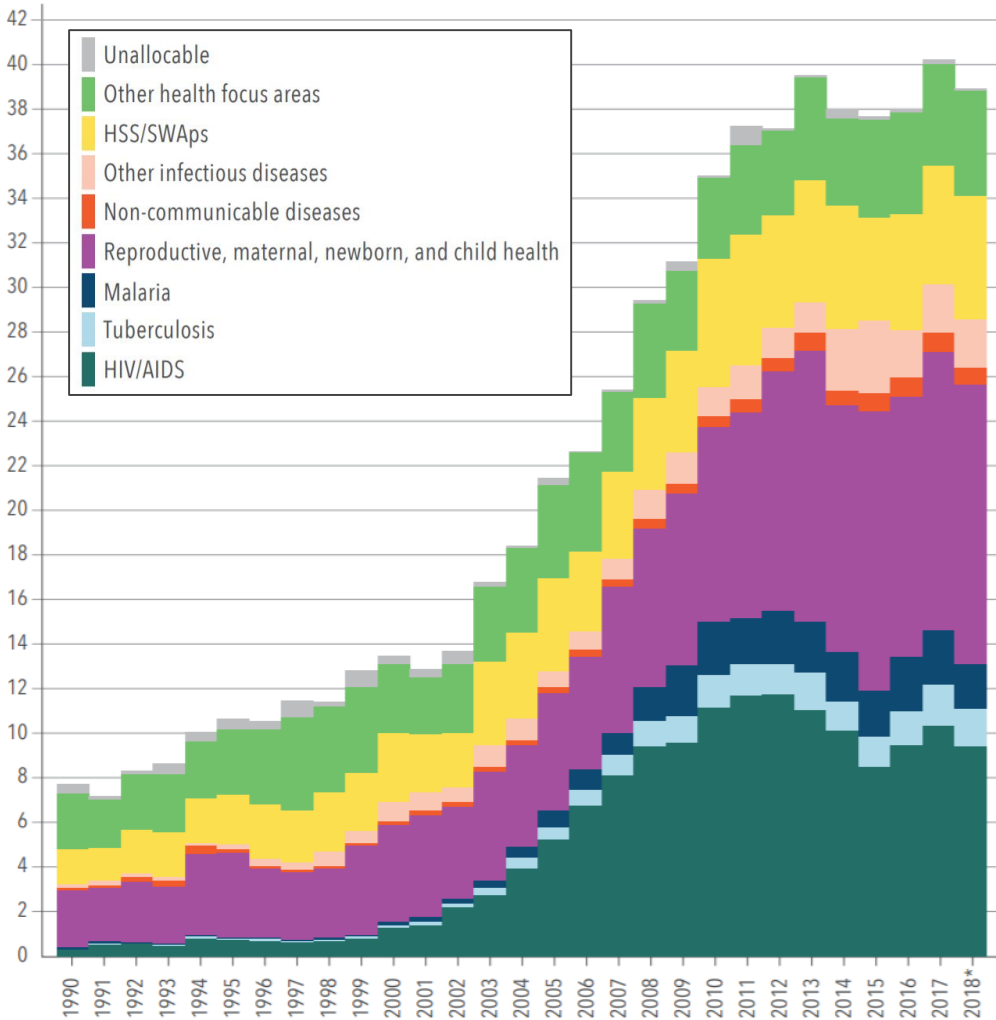
- DAH is playing an increasingly smaller role in health financing overall
- Domestic financing is already very high for TB and increasing for HIV and malaria
- DAH remains the majority of funding for malaria
- DAH increasing for health systems strengthening and sector-wide approaches

 **COVID-19 Caveat:** The impact of COVID-19 on the fiscal space of countries, in the short-, medium- and long-term, may affect the ability of countries to mobilize domestic funds, and therefore the sustainability of funding for the three diseases and health systems.

Funding for HIV, malaria and TB in low- and middle-income countries (US\$ billions)



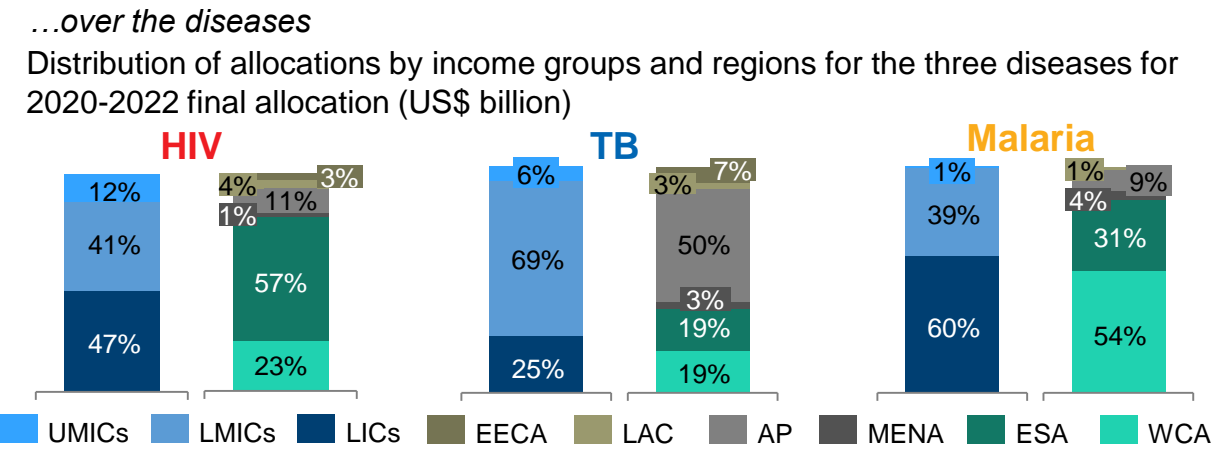
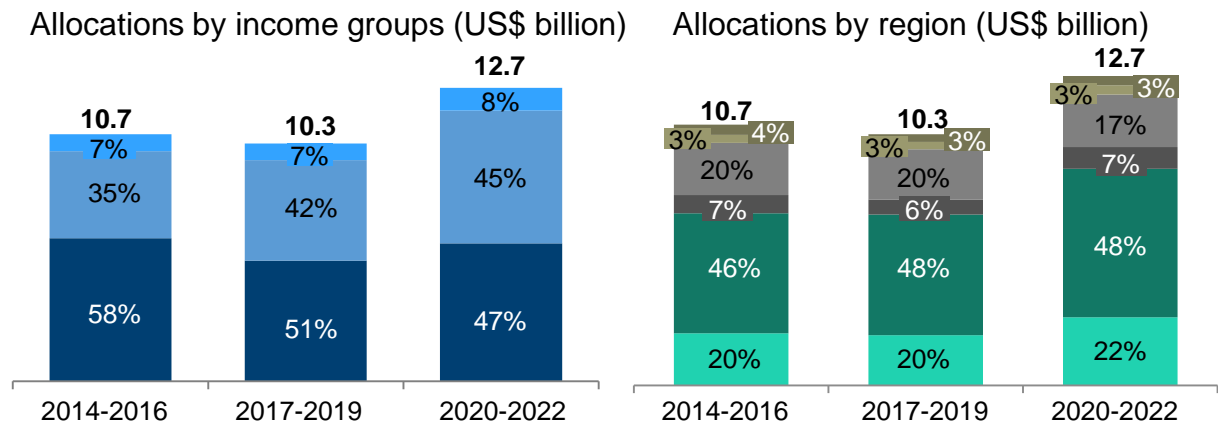
DAH for health components (in billions of US\$)



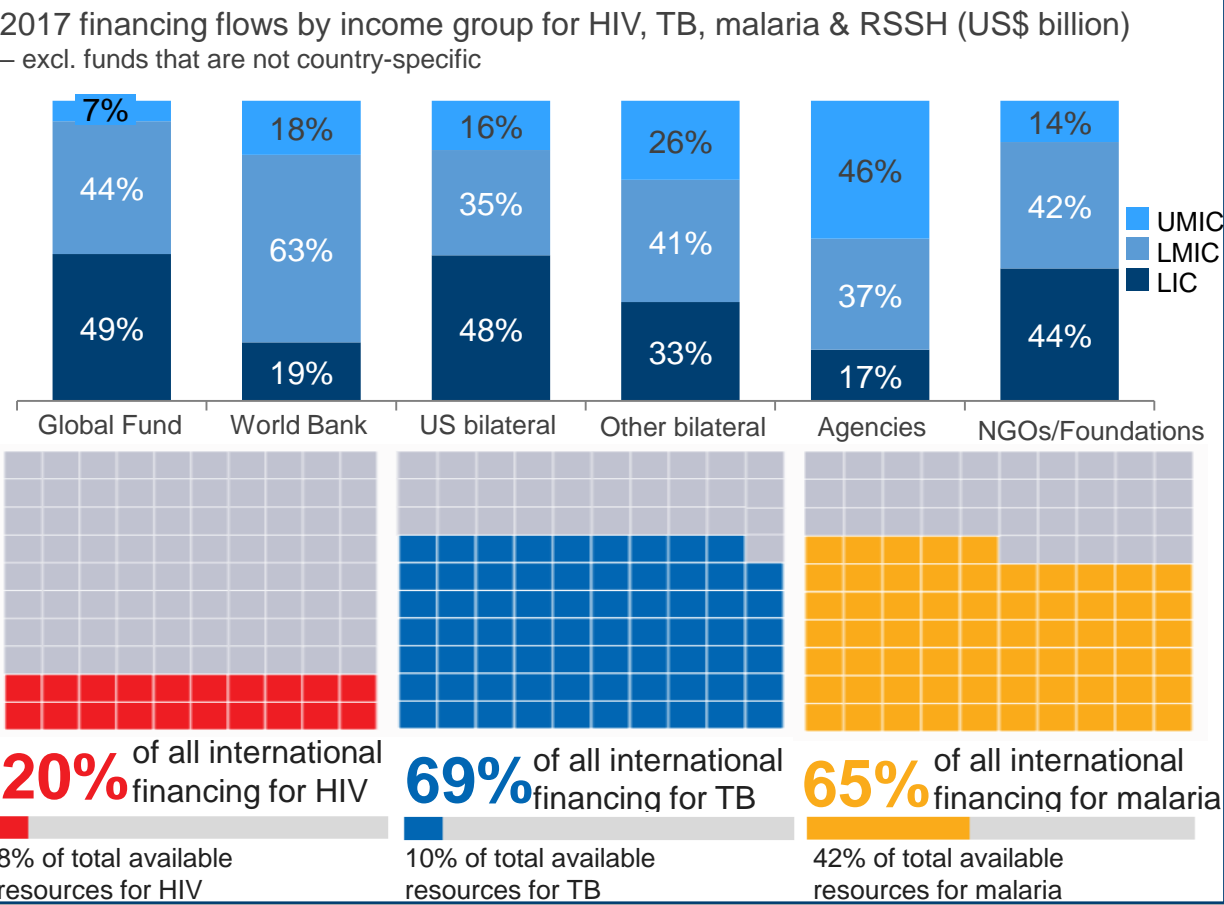
Opportunity for the Global Fund to play an increasingly catalytic role, especially in HIV, as the majority of funding switches to domestic resources.

The Global Fund in the health financing landscape

Where is Global Fund money spent? ...over time



How does Global Fund financing compare to other funders?



The Global Fund plays a critical role as high % of international financing for TB and malaria. Stable regional shares of allocations, with higher 2020-2022 allocations in LICs and Africa for HIV/malaria and in LMICs and Asia for TB.

6. Population Trends

Global population trends

- The absolute size of the world's population is increasing, but the rate of growth has been declining since 1990.
- The **growing population** is increasing the demand on health systems, meaning that a greater number of people need to be reached with prevention interventions.
- Need for accelerated prevention efforts to prevent increases in the absolute number of people suffering from the three diseases, despite reducing incidence.
- Strongest population growth 2020-2030 expected in **Africa** (+30% and +26% in WCA and ESA, MENA +19%, LAC +10%, 11% CSA, 9% ESEA) and **LICs** (LICs +28%, LMICs +13%, UMICs +7%).
- Many regions are experiencing population shifts. Sub-Saharan Africa is expected to experience a **youth bulge** with a concomitant need to keep the working population healthy for societies to thrive.
- The population **aged 65+** is the fastest growing segment in all regions.
- Ageing populations have a higher prevalence of non-communicable diseases and co-morbidities, with implications for health and social care, compounded by the impact of reduced tax revenue on system sustainability.
- Ageing also has an important gender dimension: women are more likely to live alone in older age and have less financial resources.



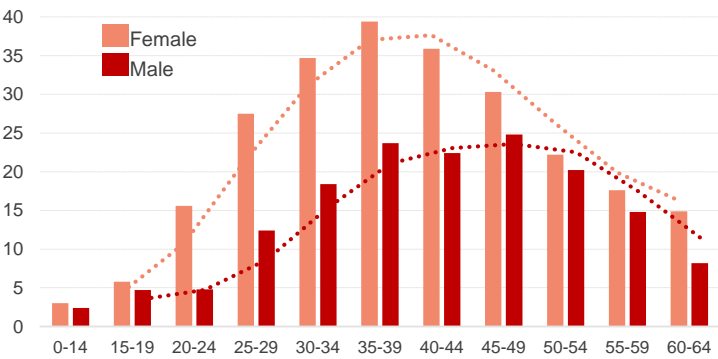
Growing world population increases the absolute need for disease prevention and treatment; differential growth in certain age brackets (working age, elderly) affects demand on health systems and the types of health services needed.

7. Equity, Gender and Human Rights

Gender is a crucial factor in the fight against epidemics

HIV

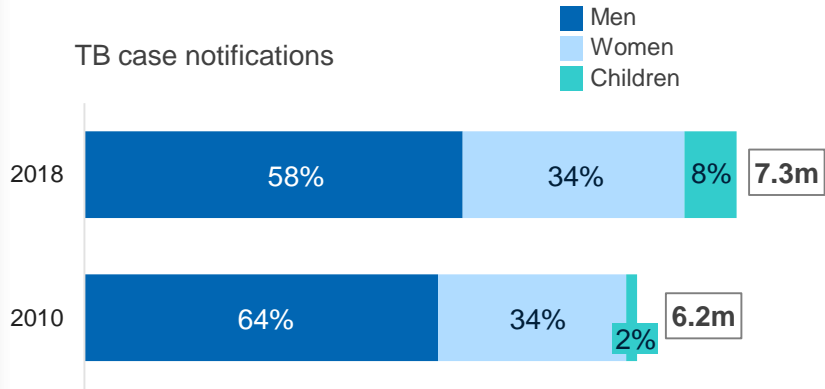
HIV prevalence (%) by age, sex in South Africa (2018)



- Women in the 15-24 years age group in Sub-Saharan Africa have a 2.4 times higher incidence of HIV than men of the same age.
- Despite 25% reduction from 2010-2018, 6000 adolescent girls and young women (AGYW) still become newly infected with HIV every week.
- Female sex workers, transgender women and gay men and other men who have sex with men are 21x, 12x and 22x more likely to acquire HIV than the general population, respectively.
- Men are less likely to take an HIV test, less likely to initiate and adhere to treatment, and more likely to die of an AIDS-related cause.

TB

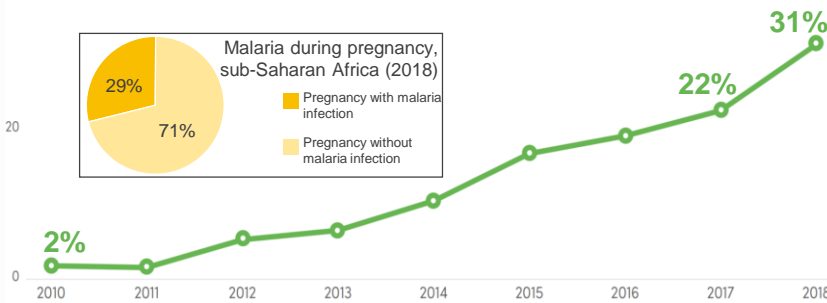
TB case notifications



- Men are more likely to get TB but less likely to access TB diagnostic and treatment services and adhere to treatment.
- Much of the gender difference in TB case notifications is related to social and occupational risk factors for TB; including smoking, alcohol use, diet, diabetes and crowded, poorly ventilated occupational conditions.
- Gender-related barriers to TB services are faced by all genders. Men are less likely to use primary healthcare services, because they are perceived to be for women and children. Women face greater financial barriers to accessing care, and in some settings, are less likely to receive a sputum examination due to cultural norms and perceptions around femininity.

Malaria

% pregnant women in Sub-Saharan Africa receiving three or more IPTp* doses



- Social, economic and cultural factors play a crucial role in determining differences in gender-related vulnerability to malaria.
- Women often have fewer financial resources to access services, and may delay or seek sub-optimal care.
- Pregnant women are at greater risk of developing severe malaria due to decreased immunity. Cultural and gender norms further dictate limitations on the mobility of pregnant women, impeding their ability to access care.
- 16% of low birthweight in countries in SSA with moderate or high transmission is attributable to malaria during pregnancy.
- Women are at risk of exposure when collecting water or performing agricultural work during peak biting times, the same is true of men who work in mines, forests or fields.

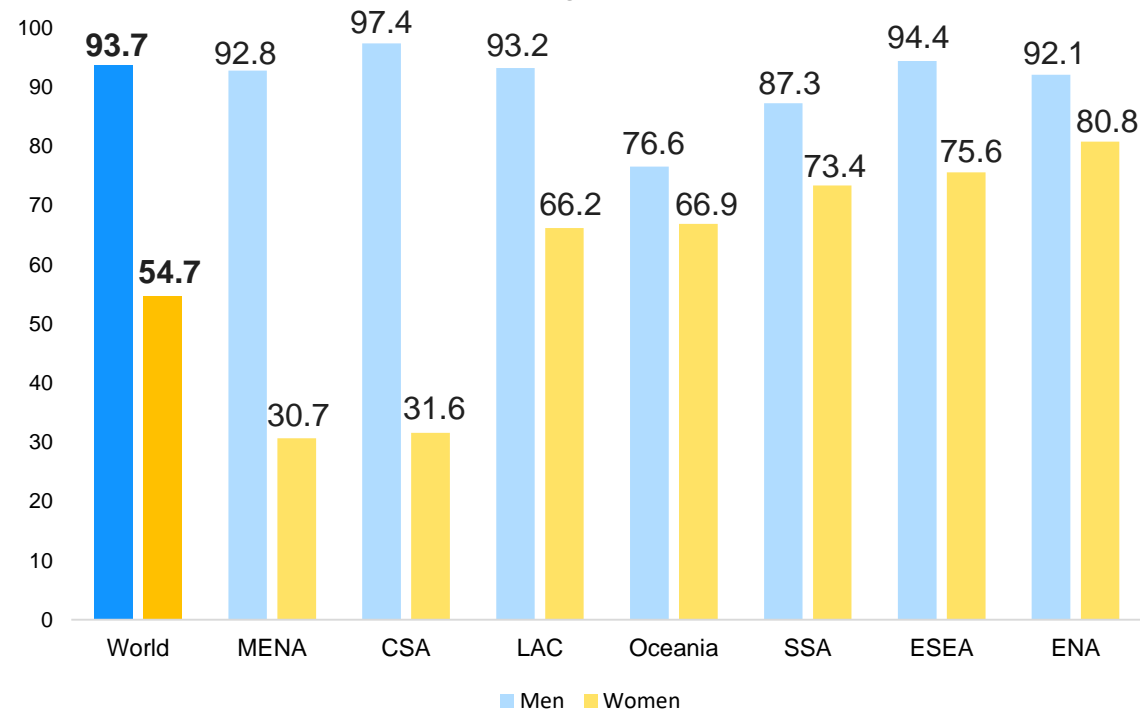
Winning the fight against epidemics requires accelerated progress on gender equality and scale-up of gender-responsive health services for all genders. Gender-responsive programing must include gender-diverse communities.

*IPTp: Intermittent preventive therapy in pregnancy (IPTp) with sulfadoxine-pyrimethamine recommended at each antenatal visit from early in the second trimester. WHO recommends at least three doses of IPTp during the pregnancy. SSA = Sub-Saharan Africa. Sources: UNAIDS, SABSSM V, Global TB Report 2019, World Malaria Report 2019, Global Fund Technical Briefs on Gender, Human Rights and HIV/TB/malaria.

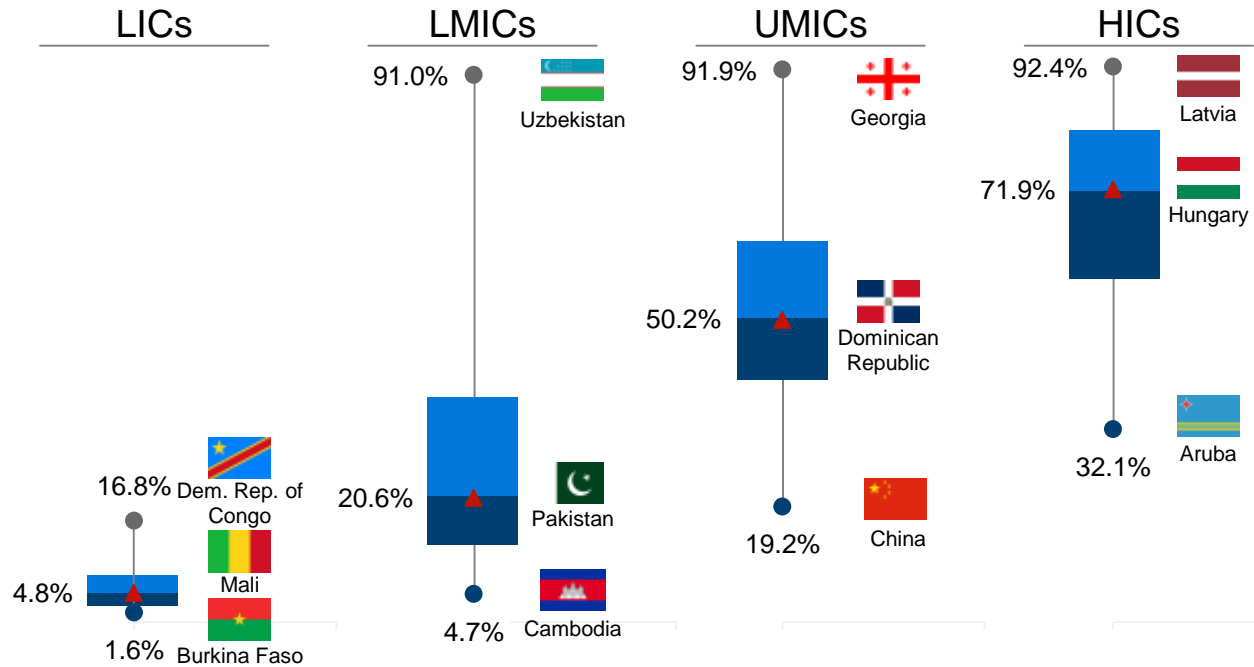
Towards a gender-equitable world

Gender is one of the most significant determinants of health and sustainable development. Profound inequalities exist and persist between the genders in all regions of the world. The Global Fund has made protecting and promoting human rights and gender equality a strategic pillar of its work, and is acutely aware that gender inequality fuels the spread of epidemics. Harmful gender norms, discrimination, violence, access to education and a lack of tailored gender-sensitive services affect access to health care for all, and fuel new infections.

Labor force participation rate by gender in 2017 (in pp%)



Dispersion of female educational attainment, at least completed upper secondary¹ (%)



Gender-transformative programs should take regionally differentiated approaches and address the intersections of gender with other socioeconomic influences on health.

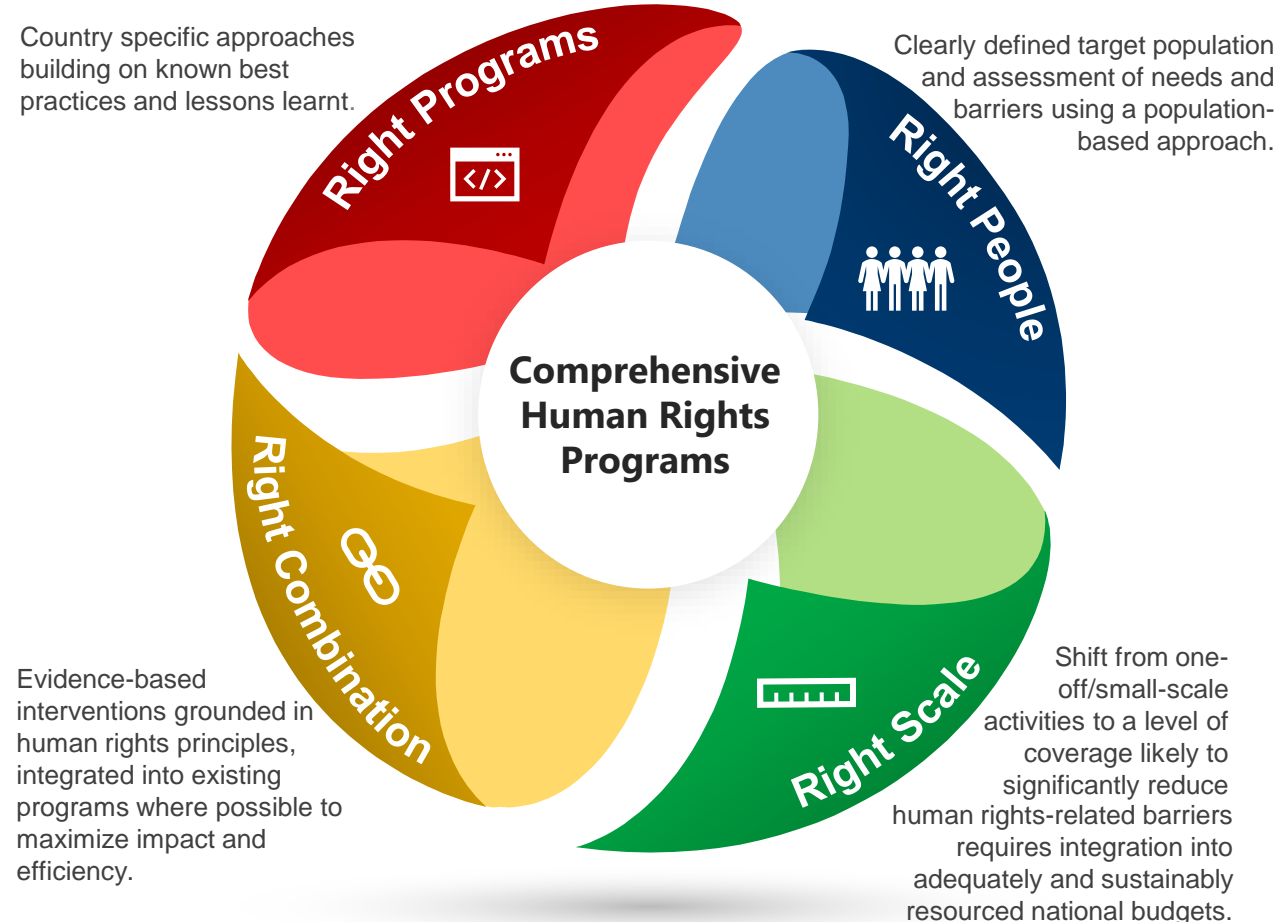
1. Most recent available data between 2010 and 2018
Source: UN Women, World Bank

MENA=Middle East and North Africa, CSA=Central and Southern Asia, LAC=Latin America and the Caribbean, SSA= Sub-Saharan Africa, ESEA=Eastern and South-Eastern Asia, ENA=Europe and North America

Human rights-related barriers to health

- The movement to end epidemics calls us to build more **just and equal societies**. Too often, the people most vulnerable to disease are the same people who lack access to health care because of stigma, inequality or discrimination.
- Empowerment is critical to remove human rights-related barriers, **empowering** affected populations to know their health-related rights, **mobilize** around these rights, and **demand** change leads to improvements in the delivery of services in health facilities and in communities.
- Beyond a minimum human rights standard that all grants must abide by, core human rights principles are embedded throughout the Global Fund's grant lifecycle – **participation, equity, accountability, transparency**.
- Global Fund programs address key **human rights-related barriers to health**, including: stigma and discrimination; gender inequality and violence; punitive practices, policies & laws, including criminalization; and social & economic inequality.
- In the 20 countries¹ of the Global Fund's **Breaking Down Barriers initiative** intensive support and additional funding is being provided to comprehensively address human rights-related barriers to services, based on nationally developed and owned plans.

Key elements of comprehensive human rights programs

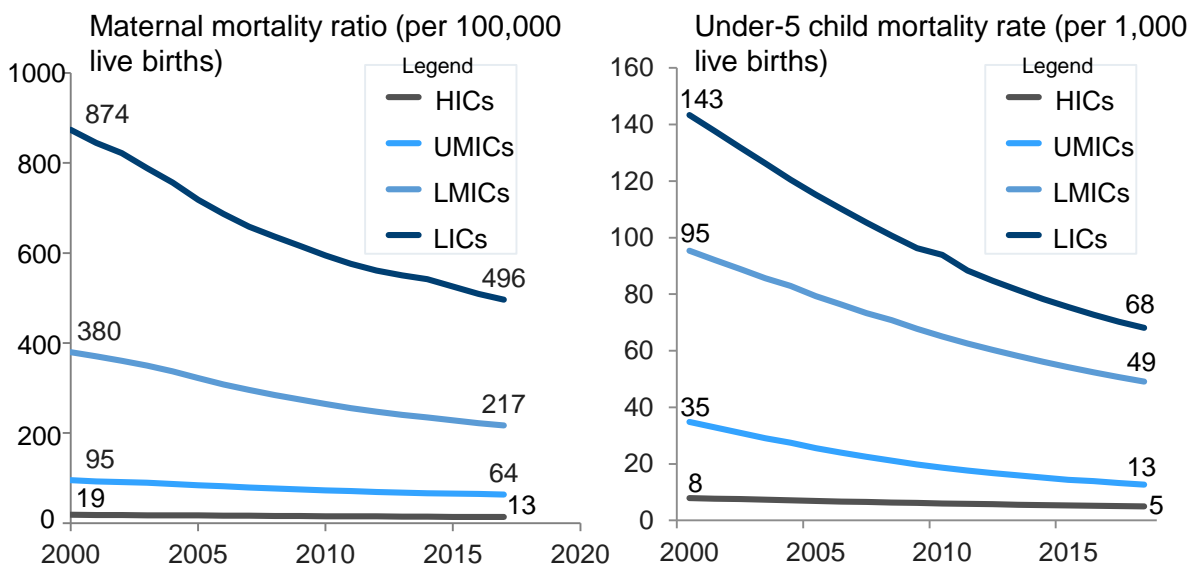


Overcoming human rights-related barriers is critical to reduce the number of new infections, improve treatment outcomes and achieve the 2030 targets on HIV, TB and malaria.

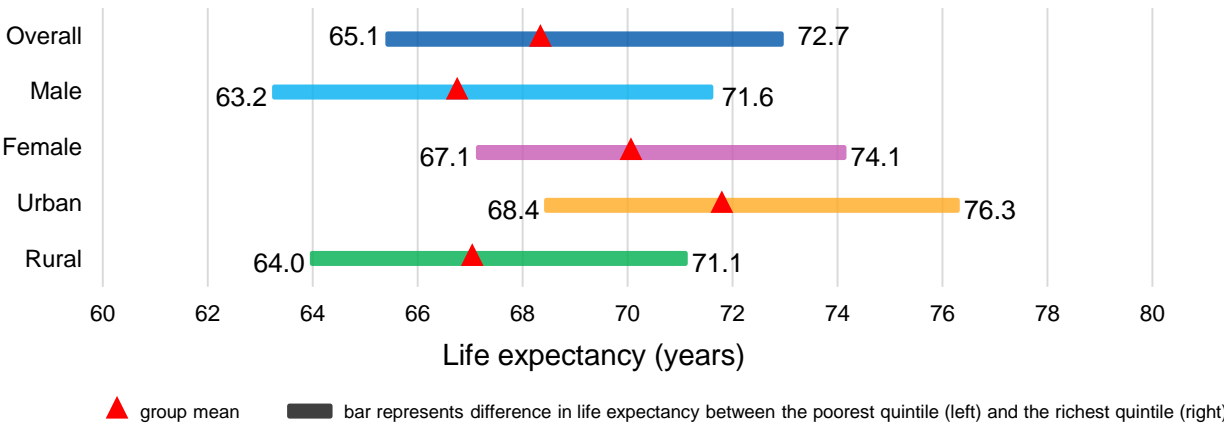
Inequity in human progress

The world today is in many ways a vastly better place than it was just a few years ago - child mortality has more than halved since 1990, extreme poverty has also been cut in half since 1990, and the death toll of HIV, TB and malaria has almost halved since 2005. Despite this remarkable progress, key inequalities persist across income groups, geography, age, sex and other factors, perpetuating barriers to quality prevention, care and treatment services. The Global Fund uses its funding to address equity-related barriers, including by working in partnership with community and civil society organizations to reach underserved populations.

Life expectancy gains made in high-income countries in the 19th/20th centuries were driven by system-wide reforms, including growing economic productivity and prosperity, the establishment of institutions responsible for public health, and improvements in hygiene and sanitation. The same life expectancy improvements made decades later in lower-income countries have not been accompanied by equivalent economic and social progress, instead, they have been achieved predominantly by scaling up modern biomedical tools, and sustained by external financing.



Spotlight India: Inequality in life expectancy between genders, wealth quintiles and urban/rural status

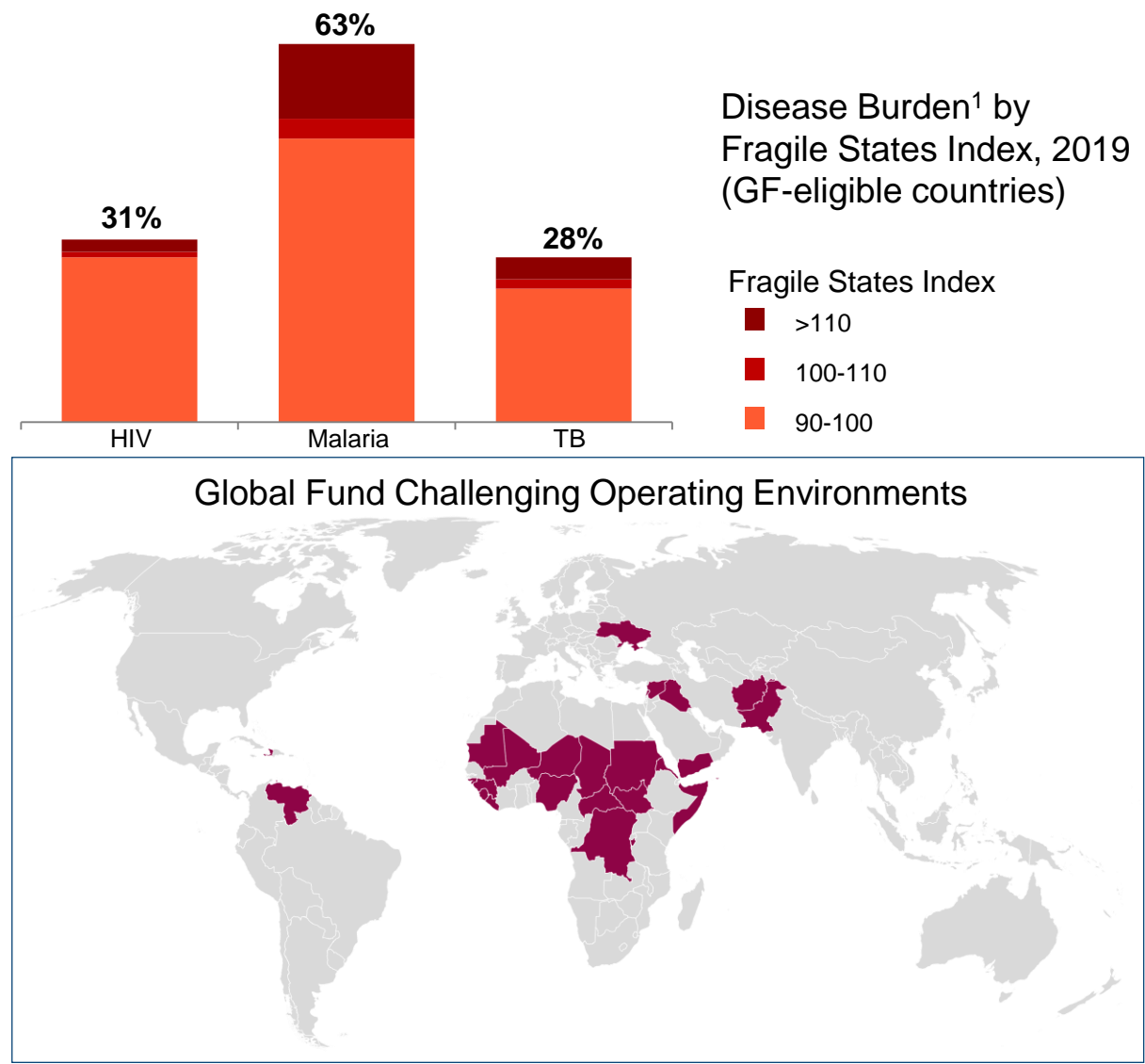


Sustainable and inclusive improvement in the health and well-being of all people requires that broader social, economic, cultural and environmental factors be addressed, leaving no one behind.

8. Fragility and Instability

Fragility and Instability

- States are fragile when state structures lack **political will and/or capacity** to provide the basic functions needed for poverty reduction, development and to safeguard the security and human rights of their populations (UNDP/OECD definition).
- Common features of fragile States include authoritarian regimes, low income status, armed conflict, natural disasters and population mobility.
- Global Fund **Challenging Operating Environments** (COEs) are countries or regions with weak governance, poor access to health services, and man-made or natural crises. Programmatic challenges in COEs require a differentiated approach, **blending development and humanitarian approaches**.
- >1% of world population is displaced** from their home. More than half of the world's refugees come from 3 countries: Syria, Afghanistan, South Sudan. The majority of the world's refugees come from and are hosted in countries in the Middle East and Africa. There is an urgent need to adapt disease interventions and health systems to better meet refugees' needs.
- The most fragile States account for **2/3 of malaria** burden and less than **1/3 of HIV and TB** burden.
- Need to take a **differentiated** and more **systemic approach** to addressing the epidemics in unstable and fragile countries, such a targeted approach is particularly relevant for malaria.
- Nature of conflict has changed**: dramatic shift from major inter-State wars to civil conflicts, militant warfare and terrorism.

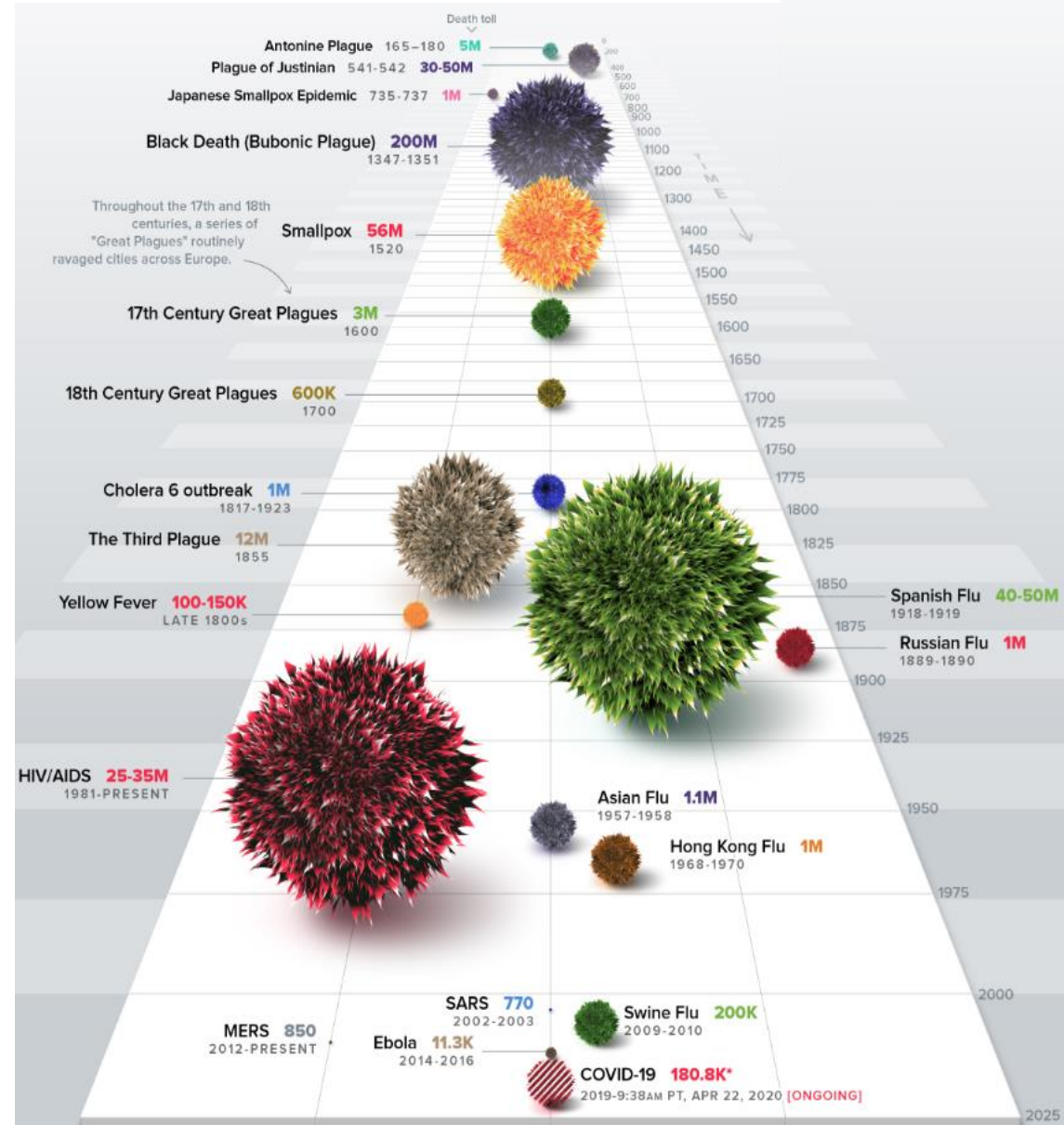


A differentiated systems-wide approach is needed to fight the three diseases and strengthen health systems in contexts of political instability or fragility.

9. Global Health Security

COVID-19 pandemic

- The COVID-19 pandemic is having a catastrophic impact on the **most vulnerable communities** worldwide and **threatens progress against HIV, TB and malaria**.
- The Global Fund has made up to **US\$1 billion** available through grant flexibilities and the COVID-19 Response Mechanism to **mitigate its impact on programs and health systems**.
- **Key activities** being funded include: epidemic preparedness assessments, laboratory testing, sample transportation, use of surveillance infrastructure, infection control in health facilities, and information campaigns.
- The COVID-19 pandemic is impacting global health product **supply chains**, affecting manufacture, distribution and demand/supply dynamics. The Global Fund is continuously assessing the situation and has introduced **flexibilities** and **exceptions** to its processes to ensure constant supply of vital health products.
- The pandemic presents challenges in ensuring the **critical engagement of communities and civil society** in processes.
- The pandemic also underscores the **importance of human rights-based and gender-responsive programming** (in light of heightened risk of gender-based violence and other human rights violations, as well as the inherent human rights implications of measures taken to control COVID-19).



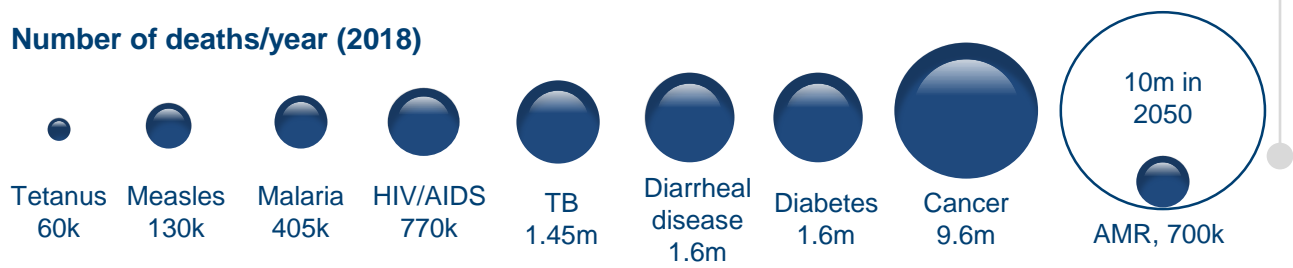
The full impact and implications of the COVID-19 pandemic cannot be known at this time, but our response, including that of the Global Fund's, will define the future of global health.

Global health security in the 21st Century

- Humans are more **connected** now than ever before, facilitating the rapid spread of diseases across borders.
- Global health security is dependent on a multitude of factors: spanning the human/animal interface, collaboration between institutions and countries, and strengthening the infrastructure, capabilities, systems and community responses also needed to defeat HIV, TB and malaria.

Antimicrobial resistance

- Antimicrobial resistance (AMR) poses a serious threat to progress in the fight against the 3 diseases.
- By 2050, AMR is predicted to cause 10 million deaths a year.
- Drug-resistant TB accounts for one third of deaths from antimicrobial resistance.
- Antiviral resistance impacts the ability to achieve viral suppression in HIV.
- Progress on reducing malaria incidence and mortality is hampered by both insecticide and antimalarial resistance.



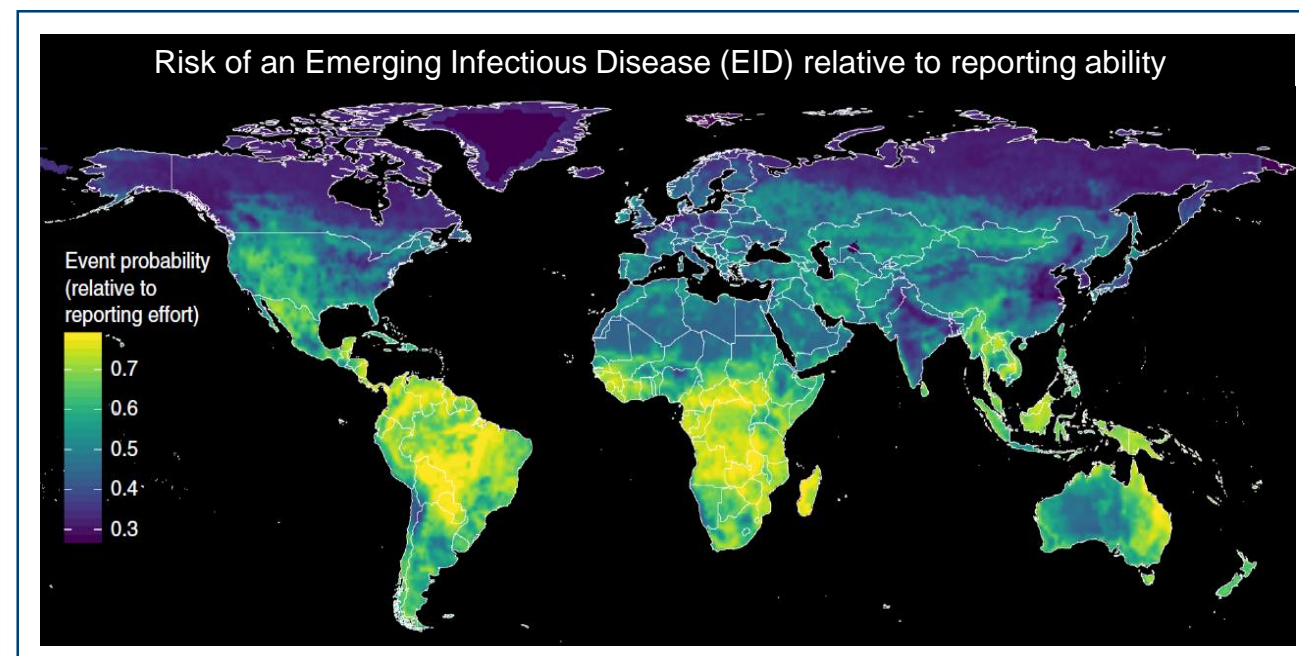
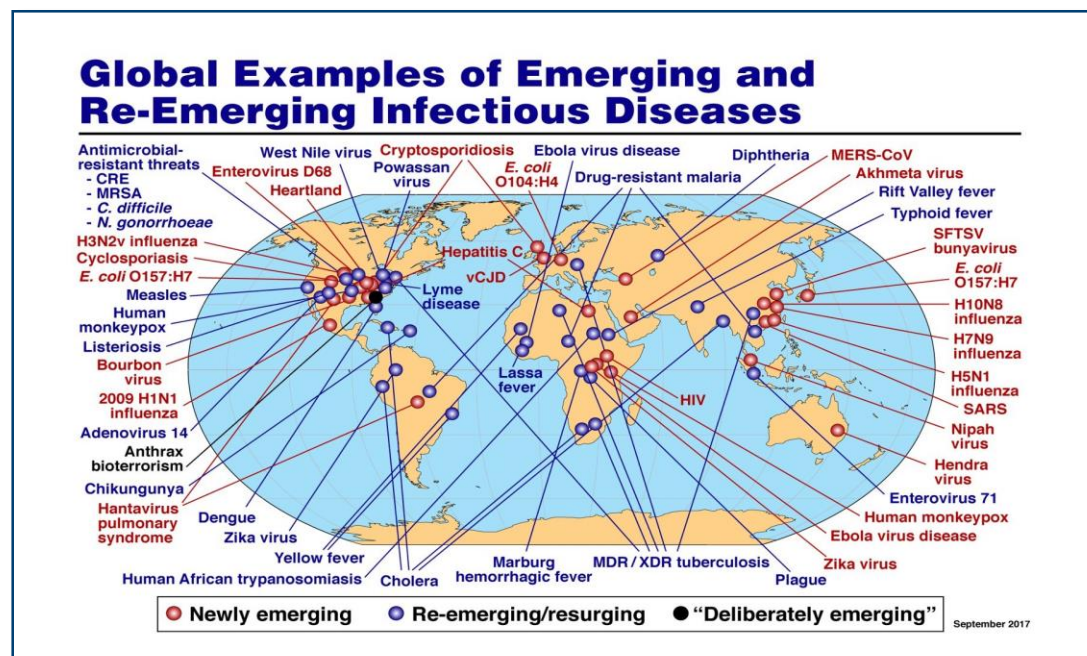
Pathogen-planetary interactions

- Deforestation is linked to ~30% of new and emerging outbreaks, such as Zika, Ebola and Nipah virus.
- Air pollution increases the risk and severity of respiratory diseases.
- Climate migration affects the transmission dynamics of infectious diseases.
- Climate change-driven food and water insecurity causes mal/under nutrition that increases vulnerability to disease and impairs ability to practice proper hygiene.
- The environment is a conduit and reservoir for drugs and drug-resistant microbes; human waste, animal waste, crops and drug manufacturing effluent all contain high levels of antimicrobials that can stimulate further pathogen evolution.

The COVID-19 pandemic is demonstrating, again, the critical importance of strengthening global health security and supporting countries to prevent, detect and respond to infectious disease outbreaks.

Emerging Infectious Diseases (EIDs)

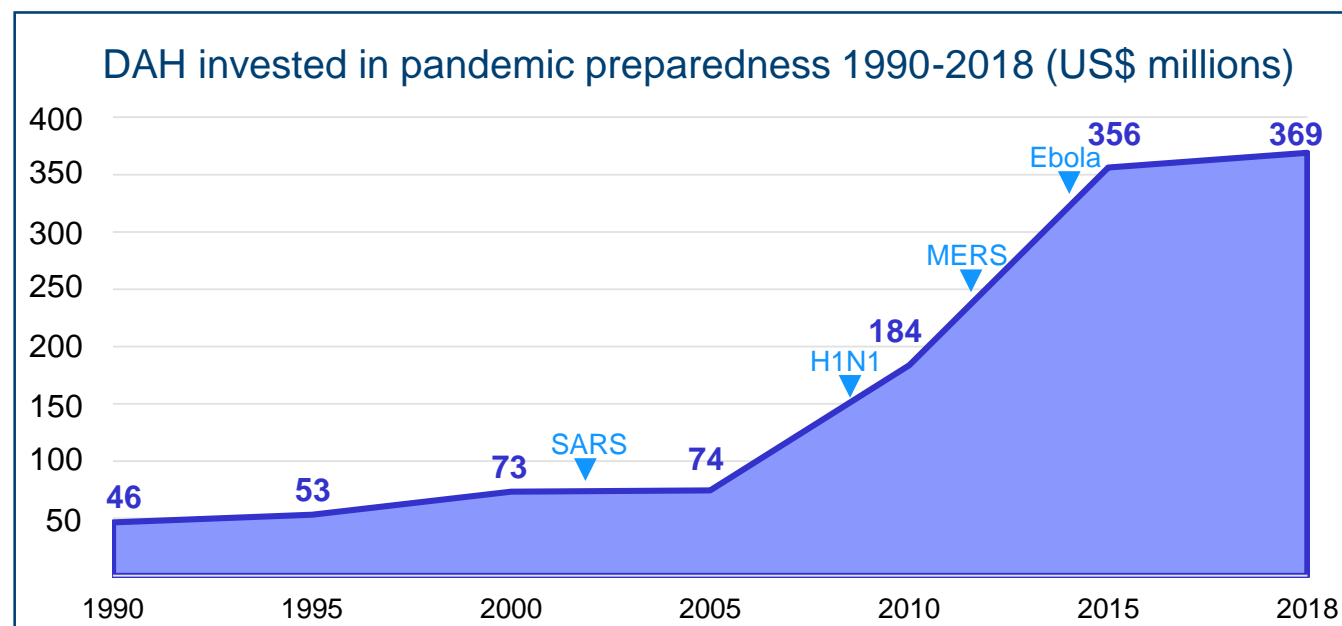
- EIDs are infections that are new or those whose incidence or spread is rapidly increasing or threatening to increase in the near future.
- About 40 new infectious diseases have been discovered in the last fifty years - an unprecedented rate fueled by greater population density, increased urbanization and global air travel.
- EIDs represent a significant threat to global health, national security, international cooperation and the global economy.
- Many EIDs arise when infectious agents are passed from animals to humans. These “zoonoses” can acquire the ability to transmit from person to person, and cause global epidemics.
- The risk of zoonotic EIDs is highest in forested tropical regions affected by land-use changes and characterized by rich wildlife biodiversity.



The COVID-19 pandemic is demonstrating, again, the critical importance of strengthening global health security and supporting countries to prevent, detect and respond to infectious disease outbreaks.

Health system investments for pandemic preparedness, detection, response & resilience

- Health system investments to prepare for a pandemic include strengthening primary health care, investing in facility infrastructure and WaSH (water, sanitation and hygiene), and training health workers. External financing for pandemic preparedness has increased significantly in the past three decades.
- Quality surveillance systems and response protocols are needed to detect a possible threat to health security, and act swiftly to contain the spread of disease. The response to a pandemic is multi-faceted, including but not limited to health service provision, infection control, community engagement, public risk communication and broader social and economic policies to prevent the spread of disease and mitigate economic impacts.
- The COVID-19 pandemic is presenting significant and still unknown challenges to health systems and domestic resource mobilization.
- Since 2014, the Global Fund has budgeted 37% of grant money for activities that support health security, amounting to \$2.56 billion in a 10-country analysis¹. Of Global Fund support for health security, 22% was spent on prevention, 48% on detection and 30% on response to health emergencies.



Examples of Global Fund investments that improve health security (2014-2020 investments from 10-country analysis)

- Establishing supra-national labs**, increase lab specimen transport and focus on supply chain (*\$677 million*)
- Expansion of antimicrobial resistance (AMR) activities** for TB, HIV and malaria (*\$508 million*)
- Integration of disease specific surveillance systems** with national systems and at points of care/entry (*\$45 million*)
- Continue responding to human resources needs:** Bolster system capacity, invest to increase available field epidemiologists, health-care workers (*\$431 million*)
- Development & mobilization of community & civil society networks** (*cross-cutting*)

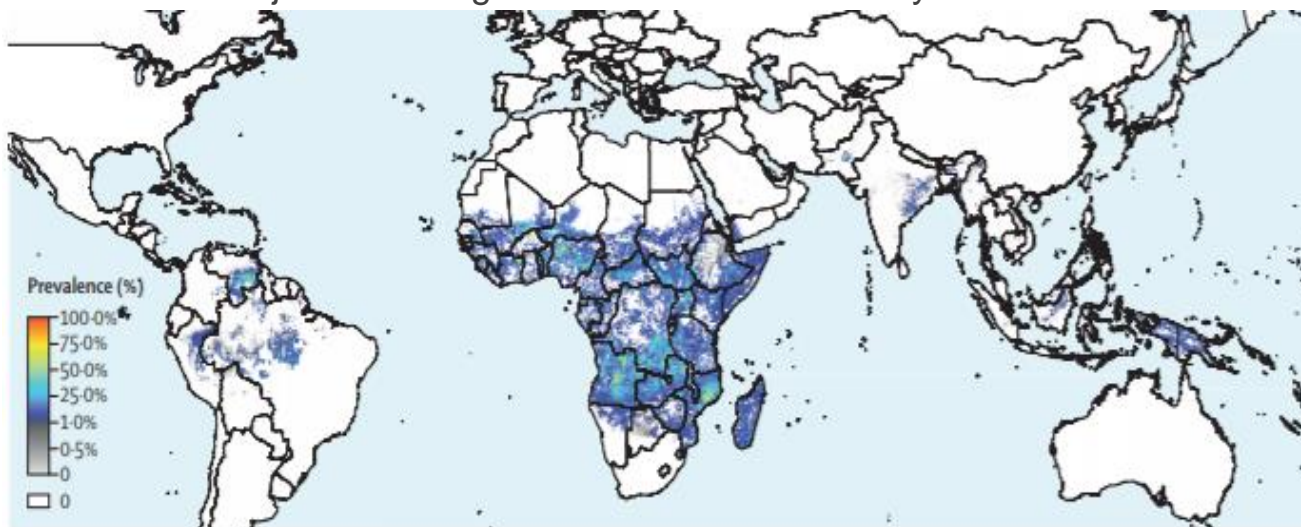
Urgent need to consider how investments in health and community systems can be leveraged to improve global health security and to protect progress in the fight against the three diseases.

10. Climate and Environmental Change

Climate change and the three diseases

Both climate change and environmental change are caused by long-term increases in human pressure on the planet. Anthropogenic greenhouse gas emissions have resulted in a 1 °C increase in global average temperature from pre-industrial times and are projected to cause an additional 3 °C increase by 2100. Atmospheric warming intensifies weather variability and causes sea level rise. All aspects of human health are threatened by heat and extreme weather. The life of every child born today will be profoundly affected by climate change (The Lancet).

Projected Change in Malaria Prevalence by 2050



Plasmodium falciparum infection prevalence (children aged 2–10 years) projected for the year 2050. In this projection, malaria intervention coverage was held constant to 2017 levels.

Climate change & malaria

Of the three diseases, malaria is the most affected by climate change, as malaria transmission is intricately connected with temperature and precipitation patterns. Global warming has expanded global vectoral capacity by around ~10% since 1950 for *Aedes mosquito* species responsible for malaria and other diseases. Climate change, migration and political instability also impact malaria transmission dynamics and service delivery.

Climate change & TB

Climate change affects vulnerability to TB, through air pollution increasing the risk of contracting the infection and climate migration affecting continuity of care.

Climate change & HIV

HIV is impacted by climate change, as changes in temperature increase the risk of opportunistic infections like toxoplasmosis and pneumocystis pneumonia, and climate migration may impact continuity of antiretroviral treatment.

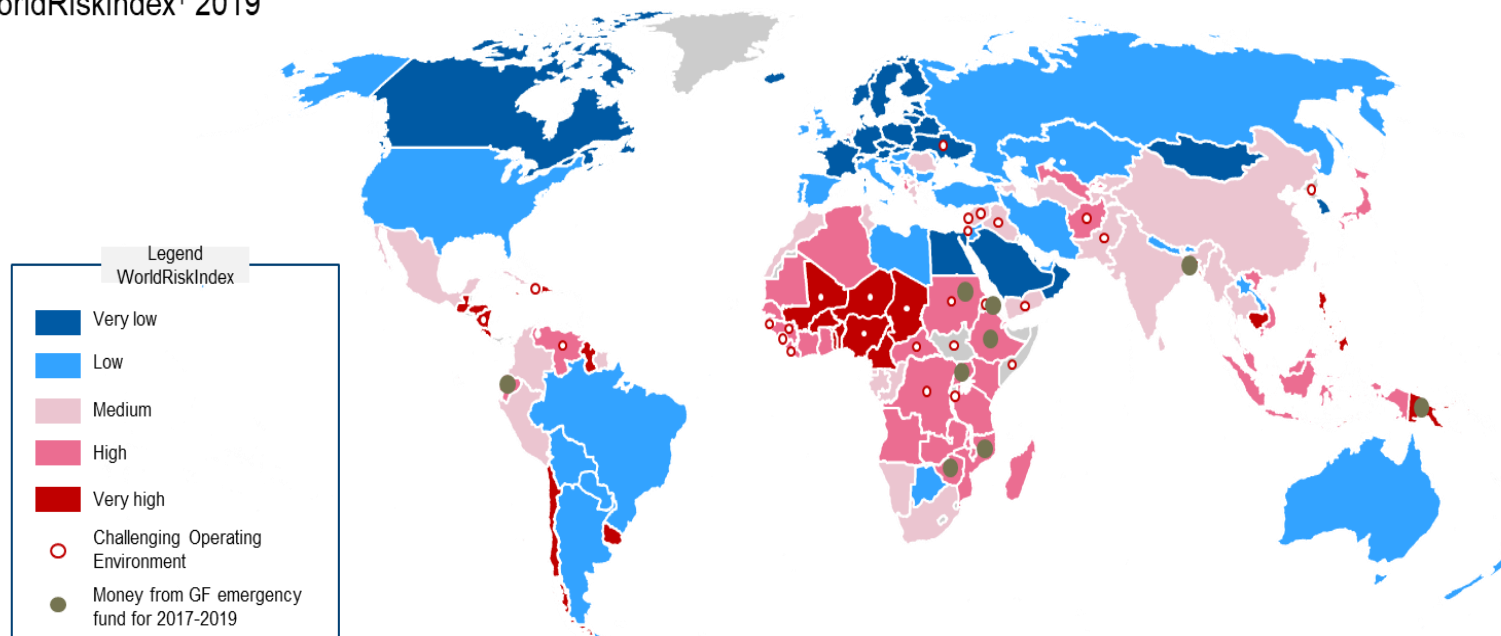
Climate change threatens progress made against the three diseases, urgent need to protect gains made and prepare for climate change-induced changes in disease epidemiology to mitigate impact on future progress.

Climate-resilient and environmentally sustainable health systems

Extreme weather events can jeopardize every part of healthcare, including supply chains, healthcare buildings, transportation systems and continuity of care. LIC/MICs, despite having contributed little to global greenhouse gas emissions, are the most vulnerable to the effects of climate change (extreme weather, global heating and sea level rise) and simultaneously have limited adaptive capacity to prepare for and mitigate impact on human health and health systems. In particularly vulnerable regions, investments in basic public health measures, such as safe water and improved sanitation, and primary health care, may be the most effective short-term measures to buffer risks to healthcare. Recommended longer-term climate-proofing investments include more robust health information systems, and weather-resilient infrastructure.

WorldRiskIndex¹ 2019

Vulnerability to Natural Disasters, 2019



Components of Climate-Resilient Health Systems (WHO)

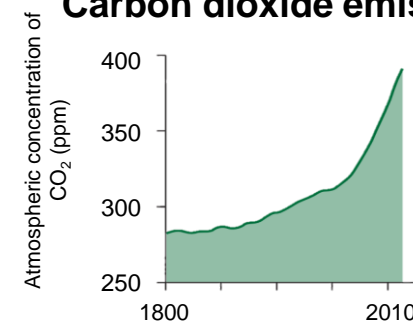


Climate resilience is a key component of health system strengthening; climate-forward investments future-proof and prepare health systems for the effects of climate and environmental change.

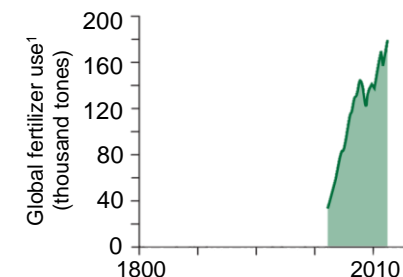
Dynamic interdependencies of planetary and human health

- Global environmental change extends beyond the climate to other planetary systems:
 - Land degradation as a result of industrialization and agriculture
 - Altered ocean dynamics and freshwater depletion
 - Biodiversity loss and large-scale biome shifts
- Human-driven shifts in the natural environment are compounded by climate change and extreme weather variability.
- Global environmental and climate change lead to food and water insecurity, directly impacting human health through e.g. mal/undernutrition and water-borne diseases.
- Environmental hazards are responsible for approx. 25% of the global burden of disease. WHO attributes 26% of under-5 deaths to poor environmental conditions.
- Women are disproportionately impacted by climate and environmental change due to increased reliance on natural resources for food and labor. After natural disasters, women have higher mortality, are more likely to suffer gender-based violence and face greater barriers to accessing healthcare.

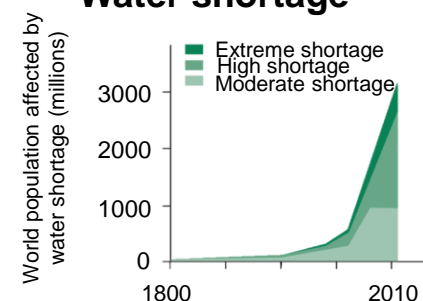
Carbon dioxide emissions



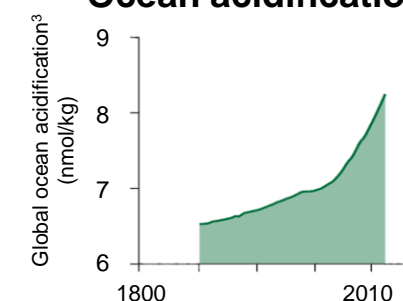
Fertilizer use



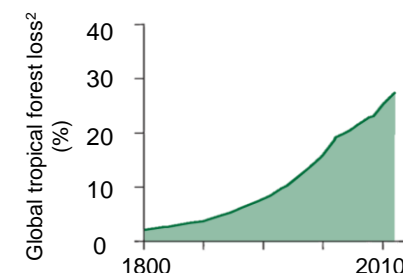
Water shortage



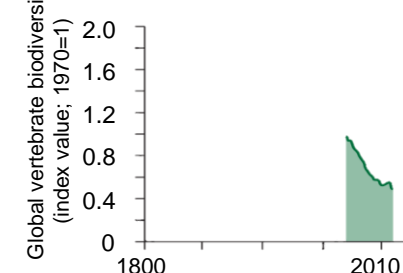
Ocean acidification



Tropical forest loss



Biodiversity



Planetary and human health are closely interlinked; different systems and levers strike a fine balance to maintain the environment, external influences on this balance generate environmental shifts and threaten human health.