

# Microdevelopment research in the last 20 years: What have we learned and what are the challenges ahead?

## DISCUSSION ON HEALTH

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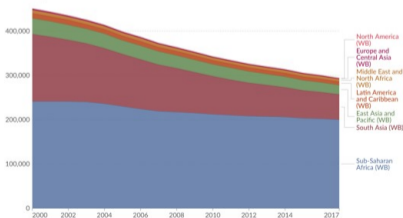
Nobel Symposium at STIAS 2024

# Observation 1: Massive (but unequal) Improvements in Global Health Indicators Over the Past 20-30 Years

- Despite Progress, Inequities Persist: Gains in health indicators are not uniform across regions
- Sub-Saharan Africa, in particular, lags behind
  - ▶ The African region account for 70% of global maternal deaths.
  - ▶ In 1990, sub-Saharan Africa contributed to 20 percent of the global child mortality burden, whereas today the region accounts for 50 percent of the world's child mortality.

Number of maternal deaths by region, 2000 to 2017

A maternal death refers to the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

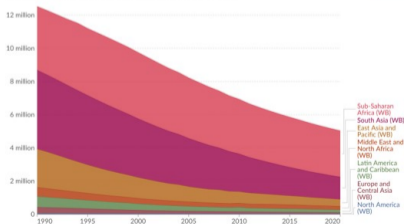


Data source: World Health Organization (via World Bank)

OurWorldInData.org/maternal-mortality | CC BY

Number of child deaths by region

The estimated number of children under five years old who die each year.



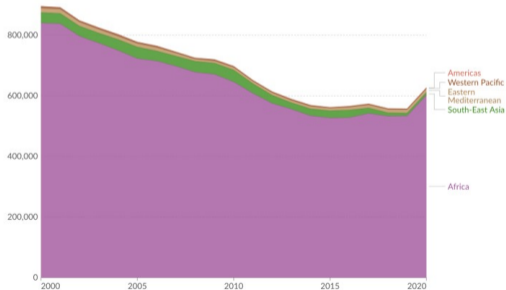
Data source: UN Inter-agency Group for Child Mortality Estimation (via World Bank)  
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# Challenge 1: Disparities in Health Outcomes across regions

- Africa's health indicators such as child and maternal mortality rates, malaria deaths, and HIV/AIDS prevalence displays weaker performance compared to other regions in the world.
  - ▶ HIV deaths halved in most of the world in last two decades (due to ART) - while in sub-Saharan Africa HIV death and prevalence rates remain very high

## Malaria deaths by world region

Estimated annual number of deaths from malaria<sup>1</sup>.

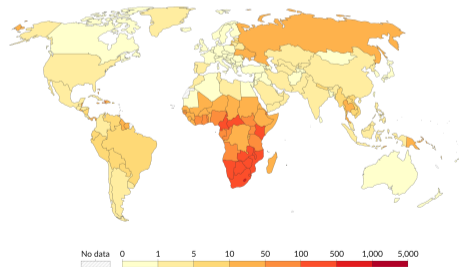


Data source: WHO, Global Malaria Programme (2021)

OurWorldInData.org/malaria | CC BY

## Death rate from HIV/AIDS, 2019

The number of deaths from HIV/AIDS<sup>1</sup> per 100,000 people.



Data source: IHME, Global Burden of Disease (2019)

Note: To allow for comparisons between countries and over time, this metric is age-standardized<sup>4</sup>.

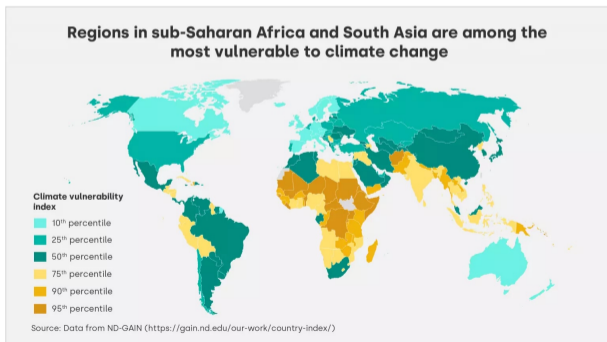
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## Challenge 1: Disparities in Health Outcomes across regions

- Intensified focus and targeted interventions are necessary to bridge the gap and facilitate improvements in the specific health outcomes where the sub-Saharan Africa region is lagging behind.
  - ▶ malaria eradication
  - ▶ maternal mortality
  - ▶ strategies and programs for HIV prevention
  - ▶ child health in general (to decrease child deaths)

## Observation 2: Climate Change and Global Health: Implications for Low-Income Countries

- Human-induced climate change is exacerbating the intensity and frequency of extreme weather events and is disproportionately affecting nations and communities already burdened by poverty and malnutrition (IPCC, 2023).

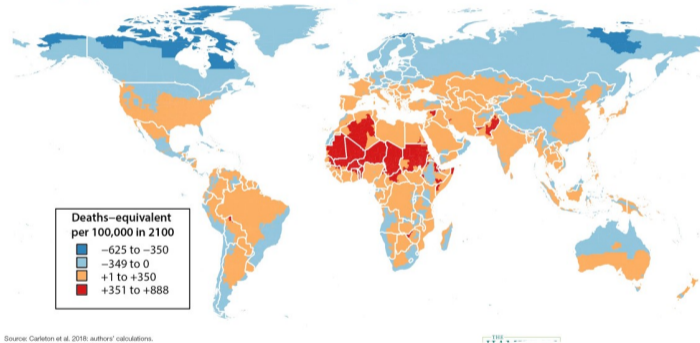


## Challenge 2: Health outcomes in low-income countries are predicted to be particularly sensitive to climate change

- Health is predicted to be the primary channel through which climate change will affect human welfare in LIC countries (IPCC, 2018)
  - ▶ New diseases; more intense flooding, drought, fires; sanitation and drinking water concerns; ecological disruptions (crop failures, disease vectors); more famine (IPCC, 2018)
  - ▶ As the global climate crisis intensifies, healthcare systems in vulnerable regions face new challenges that intensify existing burdens.

## Challenge 2: Health outcomes in Africa is predicted to be particularly sensitive to climate change

FIGURE 4.  
Mortality Impacts from Climate Change in 2100 by Region



- Carleton et. al., 2022 estimate the mortality effects of climate change over time, accounting for adaptation benefits and costs, under "baseline" scenario (no climate adaptation target).

## Challenge 2: Urgency to build climate-resilient health systems

- Future research should further enhance our understanding on:
  - ▶ What are direct and indirect impact of climate change on health in low-income countries? (Burgess et. al., 2017; Greenstone et. al., 2014; Jayachandran, 2009)
  - ▶ What type of health systems and health providers can help mitigate the health impacts predicted to be caused by climate change?
- Further understanding these impacts is crucial for developing effective mitigation measures tailored to these vulnerable regions.



## Observation 3: The past 20 years have taught us a lot about specific programs

- By using the plumbing tool "RCT" we have learned a lot about which specific programs work and which do not work - the "the low-hanging fruits"
  - ▶ Deworming (Miguel and Kremer, 2004)
  - ▶ Immunization (Banerjee et al. 2010)
  - ▶ Anti-malarial bednet programs (Cohen and Dupas, 2010; Dupas, 2014)
  - ▶ Clean water solutions (Kremer et al et. al., 2011; Dupas et al. 2016, 2023)
  - ▶ etc.
- Investment in health programs is the most cost-effective way to spend our money, (according to Givewell's ranking of the most cost-effective programs/charities - 1. malaria medication, 2. bednets, 3. vitamin A supplements, 4. vaccination programs.)

## Challenge 3: We need to continue learn how to scale health programs we know work at small scale

- Challenging to use results from pilot studies to draw conclusions about policies implemented at scale:
  - ▶ market equilibrium effects, context dependence, site-selection bias, piloting bias, and capacity for organizations/governments to scale up
- Why do some programs scale, while others have little success?
  - ▶ *"It's not luck, it's not skill, it's actually a scientific method"* (as discussed by John List)

# We are in a learning phase for how to scale promising social programs

- Few studies experimentally study whether positive results from pilot studies carry through once the program runs at scale
  - ▶ Banerjee et al. (2017) TaRL program
  - ▶ Progresa program
  - ▶ Deworming (Miguel Kremer, 2004; Bobonis et. al., 2006)
- We need more work on innovative methods for *how* to scale up health programs that are found to work at small scale.
  - ▶ E.g. we use an adaptive process in Uganda to scale-up a CHW program by allowing the NGO to continuously change the program during the scale-up and over time (Björkman Nyqvist, Guariso, Svensson, 2023) etc.

## Challenge 4: Universal access to health care

- Robust healthcare systems are essential for addressing the current preventable health challenges (and maybe especially so in Africa).
- Several international initiatives focus on the interconnectedness of health systems, aiming to address systemic challenges and enhance healthcare delivery and outcomes, particularly in Africa.
  - ▶ Two examples: GAVI (the Global Alliance for Vaccines and Immunization) and PEPFAR (the President's Emergency Plan for AIDS Relief)
  - ▶ Kremer and Glennerster work on Advanced Market Commitments for vaccines is another example of an initiative aimed to address a systemic challenge in health care delivery (Kremer Glennerster, 2004; Kremer et. al, 2020)

# Conclusions

- Enhanced research efforts aimed at improving health outcomes (maternal mortality, HIV, malaria, child health) in the sub-Saharan African region.
- Deepen our understanding of the direct and indirect impact of climate change on health in already vulnerable low-income countries and identify mitigation strategies.
- Further understand on how we best scale up health programs that we know are cost-effective.