FIFTEENTH INTERNATIONAL

ROTAVIRUS SYMPOSIUM

30 SEPTEMBER to 2 OCTOBER 2025 CAPE TOWN SOUTH AFRICA

#CHANGE

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The Changing Map of Global Health

- Volatile politics, new nationalist priorities, slashed global health funding
- Everything is challenged:
  The role of WHO, Gavi and global funding arrangements, country contributions to health, southern leadership
- How do we reimagine the pillars of global health — and how should this new map shape our agendas?

The Backdrop: Global Risks Perception Survey, World Economic Forum 2024-25

1. Misinformation and disinformation
   Societal polarization

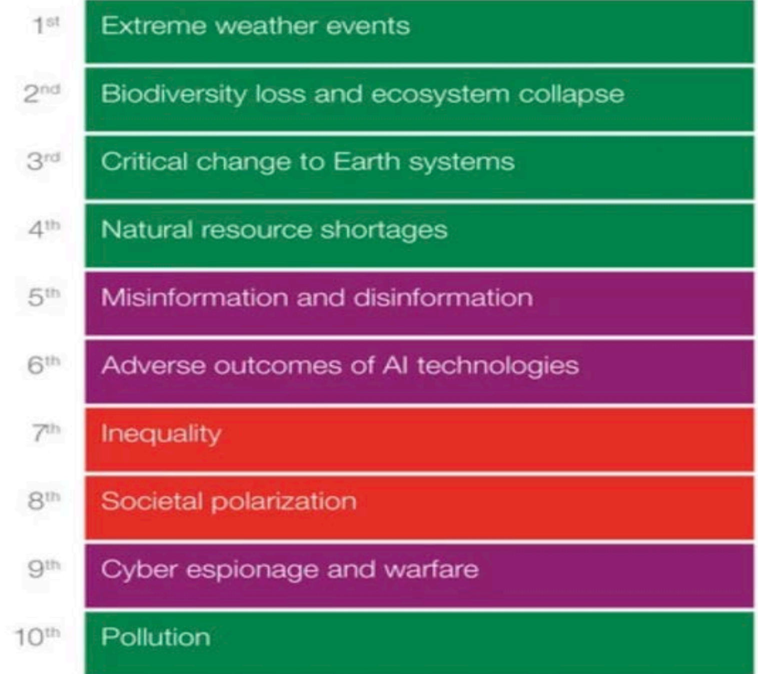
2. Extreme weather events
   State based armed conflict
   Involuntary migration/ displacement
   Geoeconomic confrontation

3. Inequality

Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period.

Short term (2 years)

Long term (10 years)



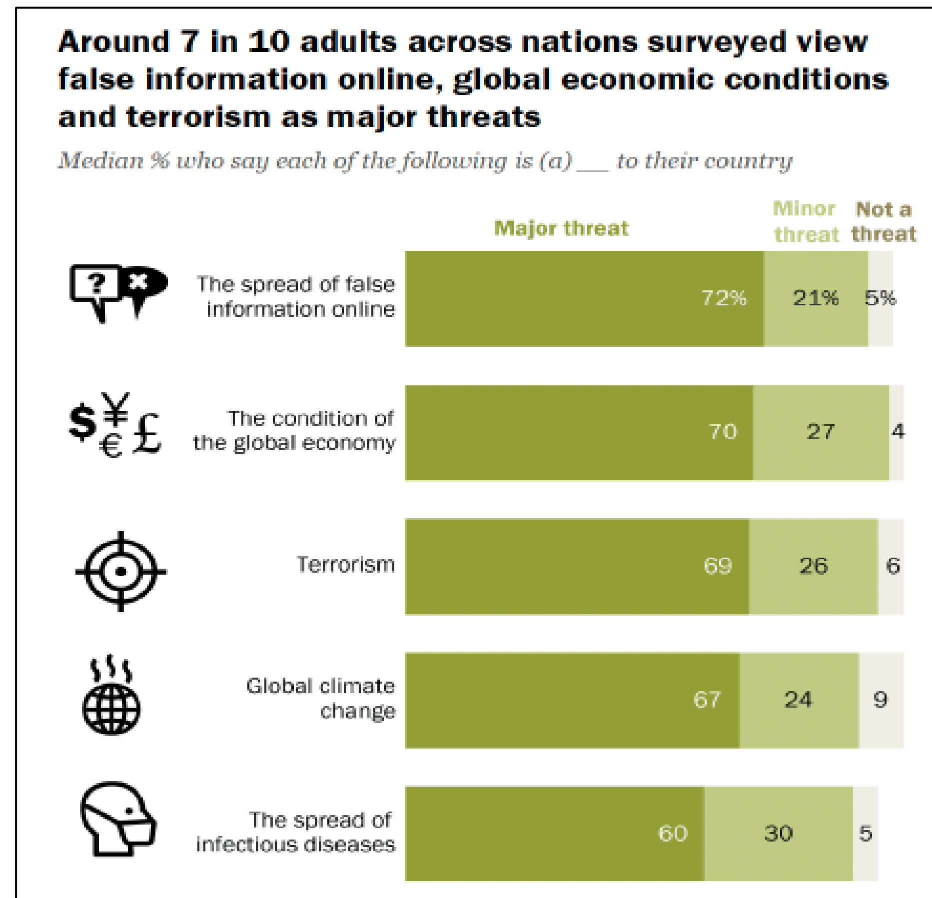
Risk categories Economic Environmental Geopolitical Societal Technologica

Source: World Economic Forum, Global Risks Perception Survey 2024-2025

Misinformation and Disinformation

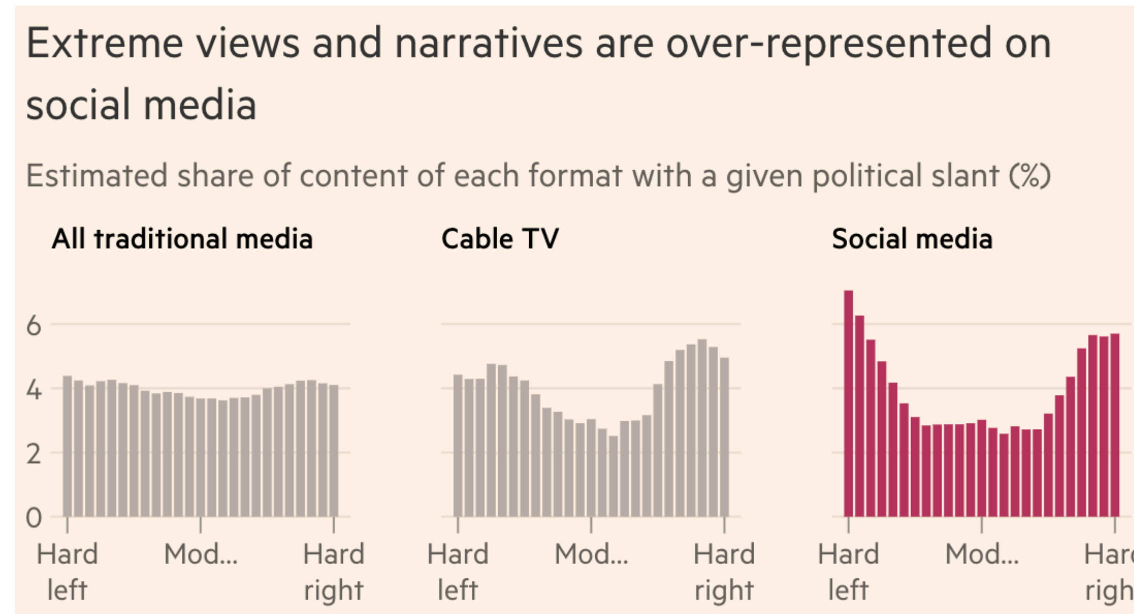
International Opinion on Global Threats:

Adults across 25 countries saw the online spread of false information as a major threat.



Pew Research Report Aug 19, 2025

Misinformation and Disinformation



- **Traditional media** (printing press, newspapers, radio, TV) expanded access to information but kept control in the hands of elites.
- **Mainstream outlets** tend to favor moderation, while **social platforms** often amplify extremes on both ends of the spectrum.
- **Social media** opened content creation to many, amplifying diverse voices.

John Burn-Murdoch FT, Sept 2025

Political Polarisation and Public Health

- Health policy has always been political e.g. early smallpox vaccination
- During COVID-19, preventive measures such as vaccination and mask use were reframed as partisan symbols
- Political identity can strongly shape health behaviours
- **Polarization of public health measures is a risk factor for health**

TIME

IDEAS • COVID-19

How Can We Escape the COVID-19 Vaccine Culture Wars?

Hiam L. BMJ. September 2025

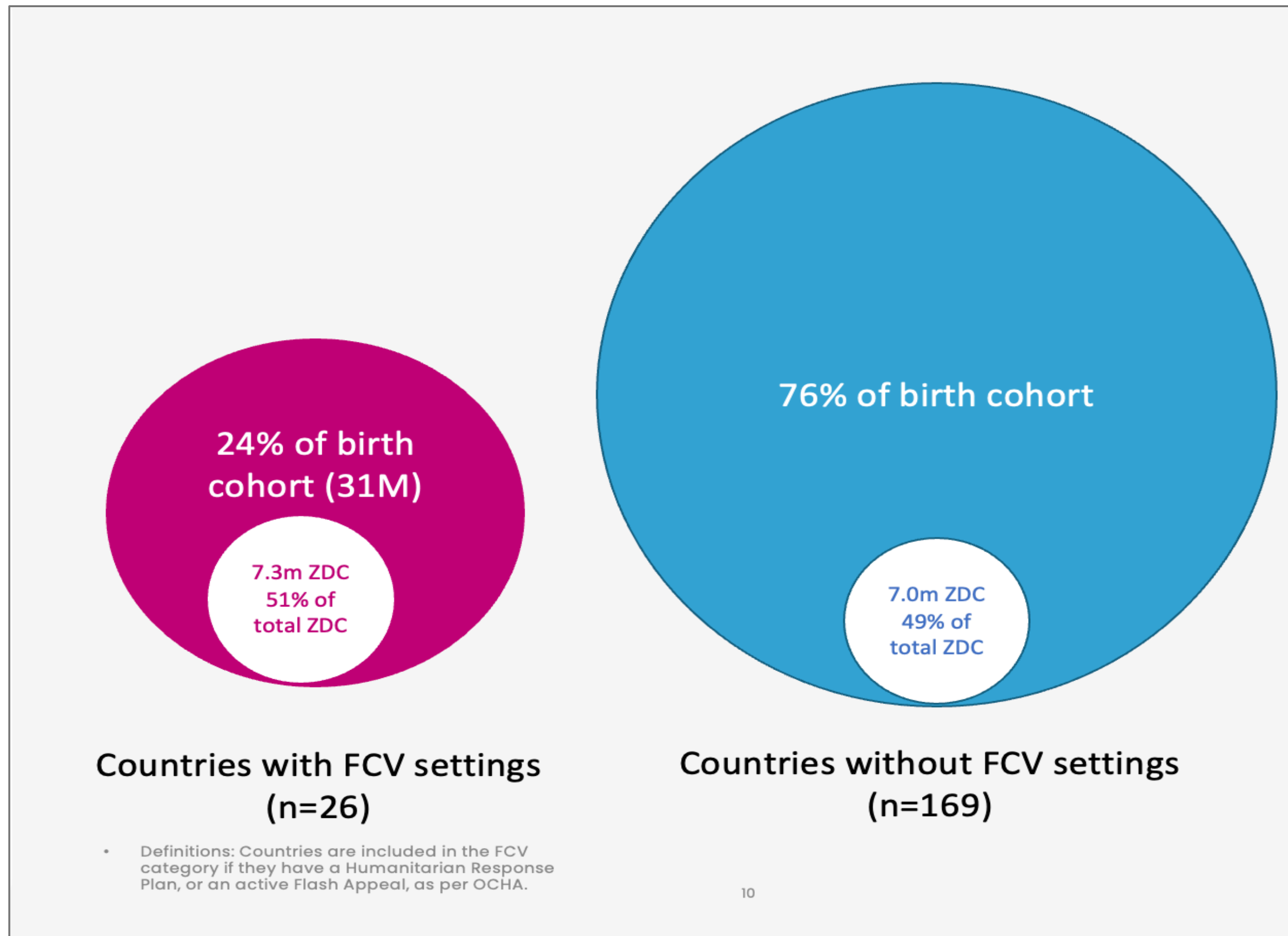
Vaccination illustrates Political Polarization

- RFK Jr: “in its zeal to promote universal vaccination Gavi has neglected the key issue of vaccine safety. When vaccine safety issues have come before Gavi it has treated them not as a patient health issue but as a public relations problem.” ….. the United States was halting support for the alliance, until it could “re-earn” public trust.

“We need to reboot the whole system, as we are doing in the United States,” Robert F. Kennedy Jr. said. | Jason Andrew for POLITICO

- Seth Berkley: “ignoring scientific evidence, embracing antivaccine conspiracy theories as official government policy, cutting critical research, and abandoning global partnerships such as Gavi…..will ultimately make Americans less safe” Science, August 2025

Fragile, Conflict, & Vulnerable (FCV) settings



Countries are included in the FCV category if they have a Humanitarian Response Plan, or an active Flash Appeal, as per OCHA.

World Health Organization unicef

The Inverse Care Law

THE LANCET 1971

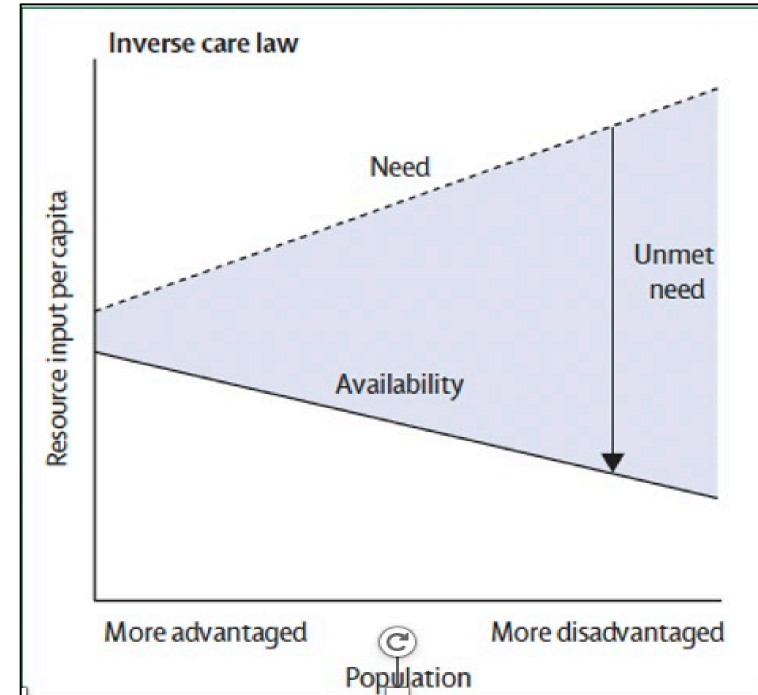
THE INVERSE CARE LAW

1971

JULIAN TUDOR HART
Glyncorrwg Health Centre, Port Talbot, Glamorgan, Wales

Summary The availability of good medical care tends to vary inversely with the need for it in the population served. This inverse care law operates more completely where medical care is most exposed to market forces, and less so where such exposure is reduced. The market distribution of medical care is a primitive and historically outdated social form, and any return to it would further exaggerate the maldistribution of medical resources.

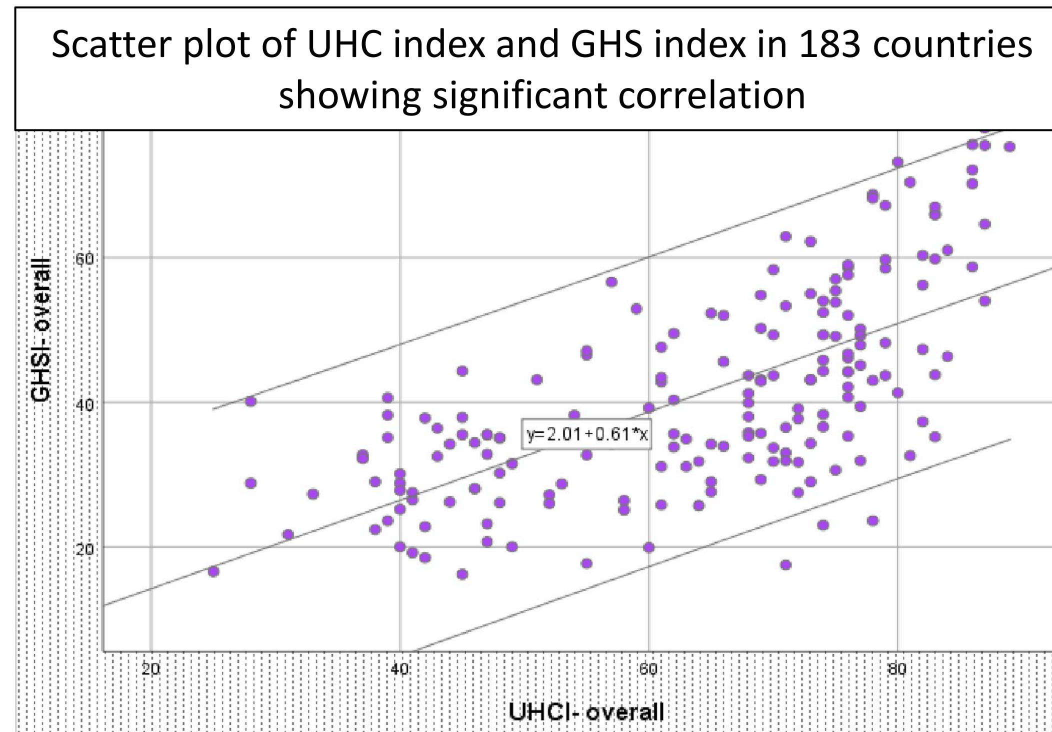
Julian Tudor Hart J. Lancet 1971



Inverse Care Law:
Socially disadvantaged populations receive less health care than socially advantaged populations.

The interface between Global Health Security and Universal Health Coverage

Scatter plot of UHC index and GHS index in 183 countries showing significant correlation

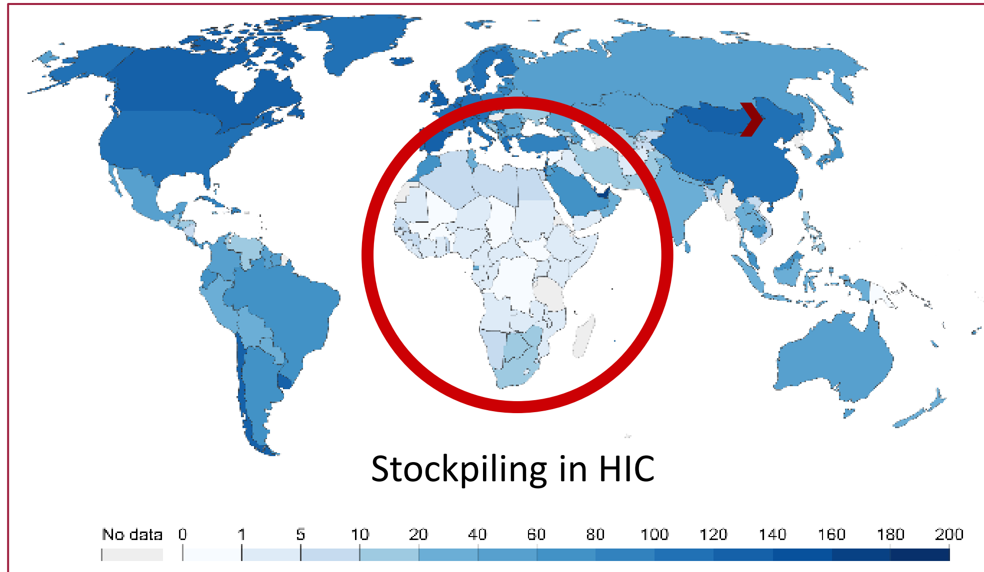


Countries with low Global Health Security Index have low capacity for Universal Health Coverage

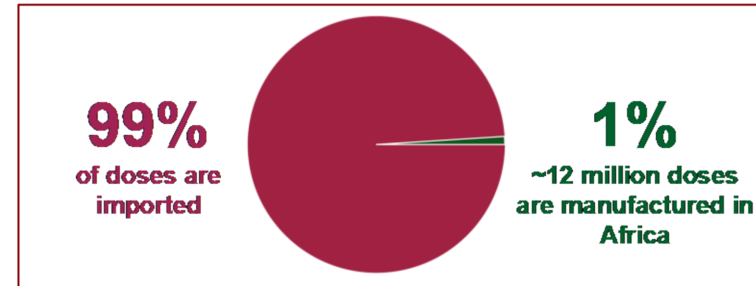
Assefa Y et al. Plos One, December 2021

Inequitable Access to Heath Products during COVID-19

COVID-19 vaccine doses administered per 100 people



Vaccine manufacturing in Africa

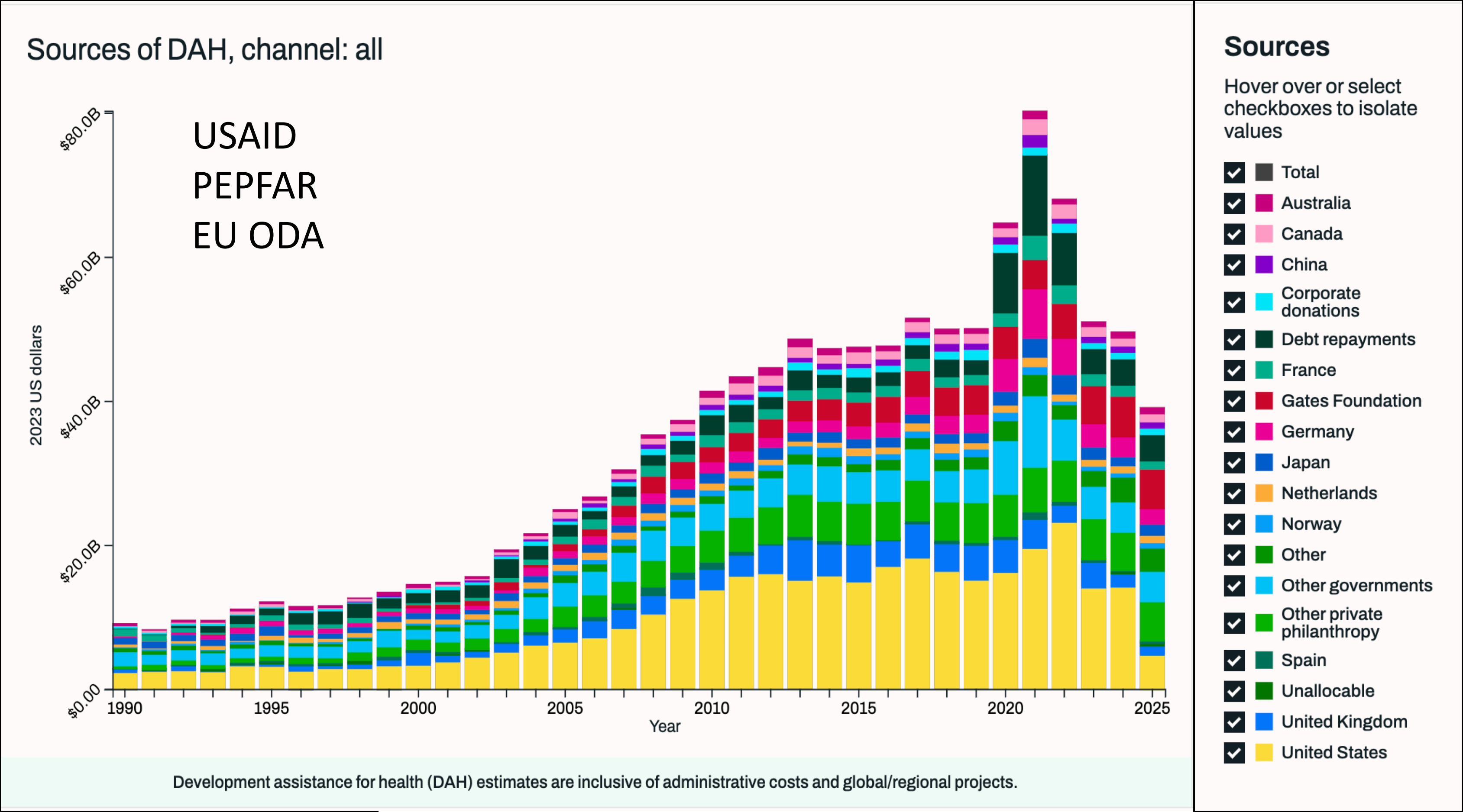


Home brewing

Covid-19 has exposed Africa's dependence on vaccines from abroad

Our World in Data 2021 & Africa CDC: Nicaise Endembe

Development Assistance for Health: The Meltdown



Institute for Health Metrics and Evaluation | Released July 2025 | © 2025 University of Washington

Impact on WHO

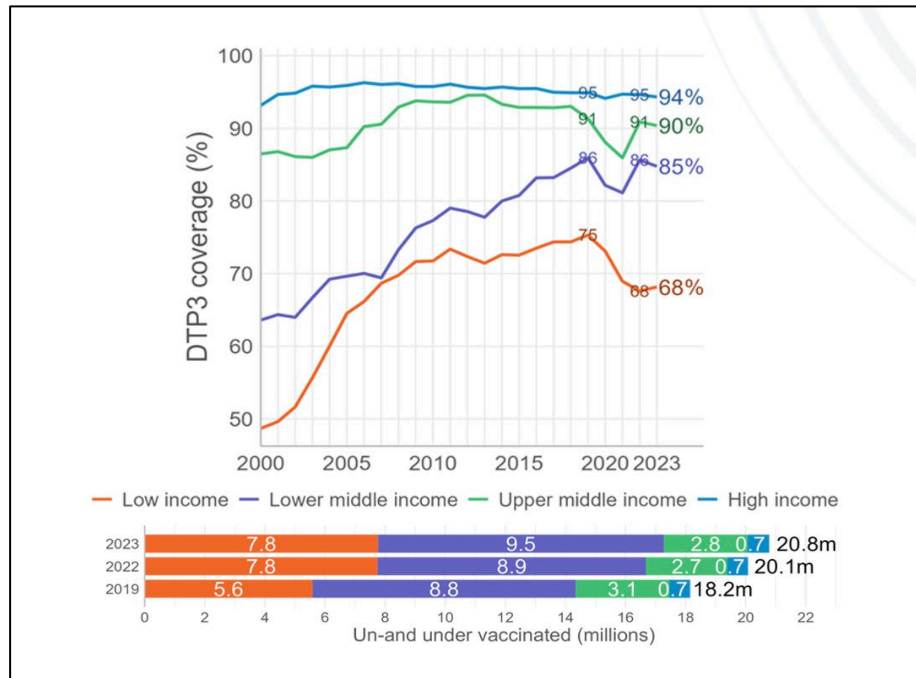
- 21% budget cut for 2026–27 (from US$5.3b → ~US$4.2b)
- ~20% staff cuts WHO HQ
- Global programmes (pandemic preparedness, emergencies) affected
- Eradication and elimination programmes affected (polio)
- African Region: >US$150 million lost from operations and programmes
- RFK JR proposing alternative accountable institution outside WHO

Impact on Gavi

- Replenishment Shortfall: \$9B pledged vs. \$11.9–13B target; gap forces tighter programme choices.
- Funding & Staff Cuts: Secretariat cost reduction ≥30%.
- Strategic Impact: Some funding commitments reduced e.g. malaria vaccines; country co-financing waivers constrained
- Shift of emphasis from HQ to countries
- Country Packages: Shift toward unified, flexible, country envelopes: country prioritization required.

Vaccine Equity in LMICs

DTP3 coverage across Income

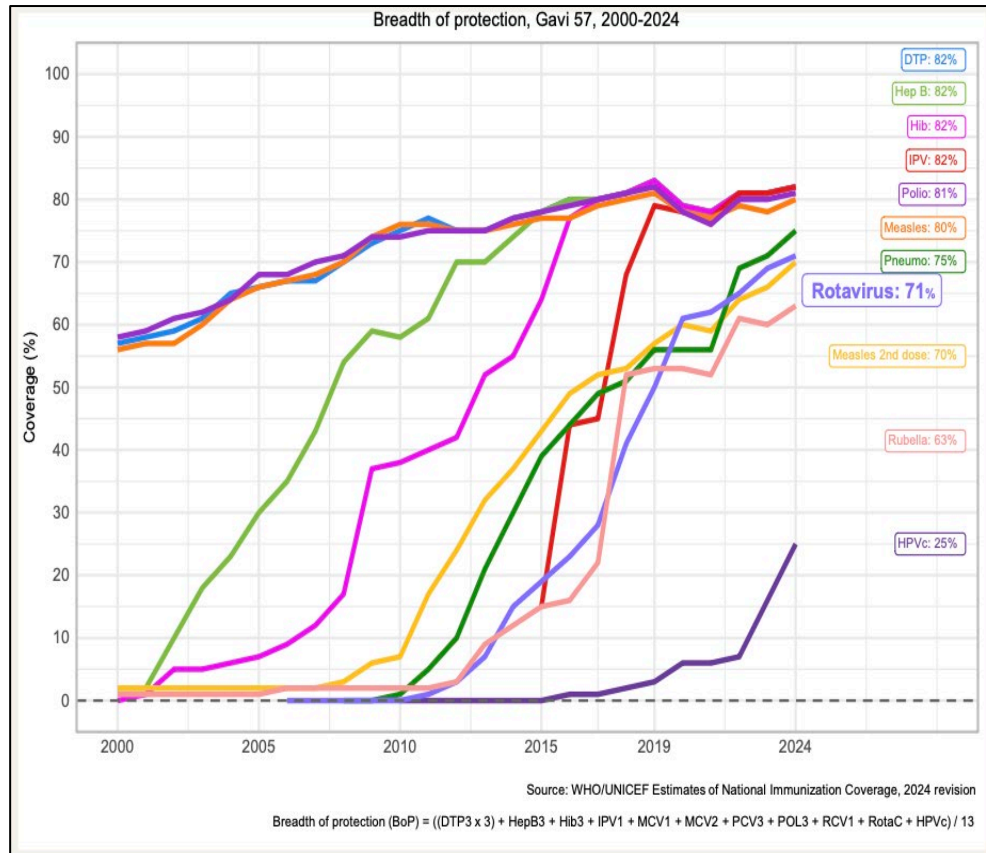


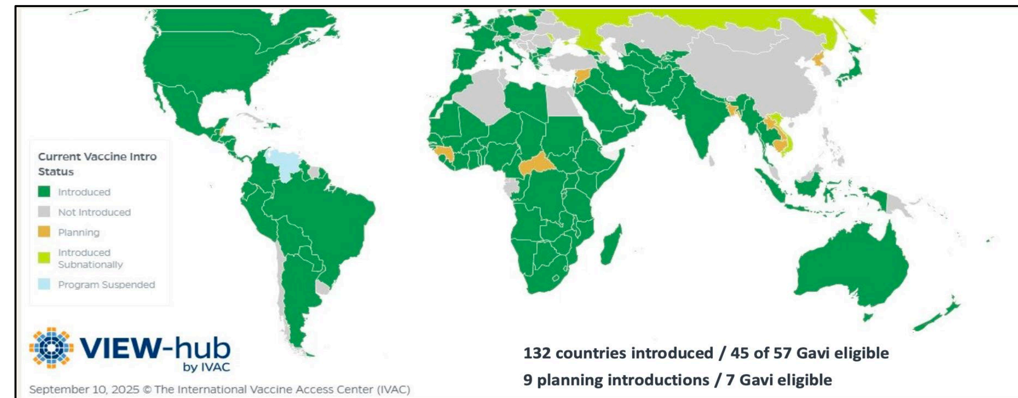
Systematic Review and meta-analysis of fully immunised children in LMICs : 108 studies, 1997 – 2019

- Individuals in poorest wealth quintile 27% (95%CI [16%,37%]) less likely to be fully vaccinated than those in richest
- Wealthiest quintile 82% (95%CI [40%,137%]) more likely to be fully immunised than poorest
- Females 3% (95%CI [1%,5%]) less likely to be immunised than males
- Children of mothers without formal education were 27% (95%CI [16%,36%]) less likely to be fully vaccinated compared to primary education or above
- No significant difference in full vaccination status in rural areas versus urban areas but heterogeneity between countries

Huda Ahmed A et al. BMC International Journal for Equity in Health June 2022

Limited progress in Rotavirus Vaccine uptake



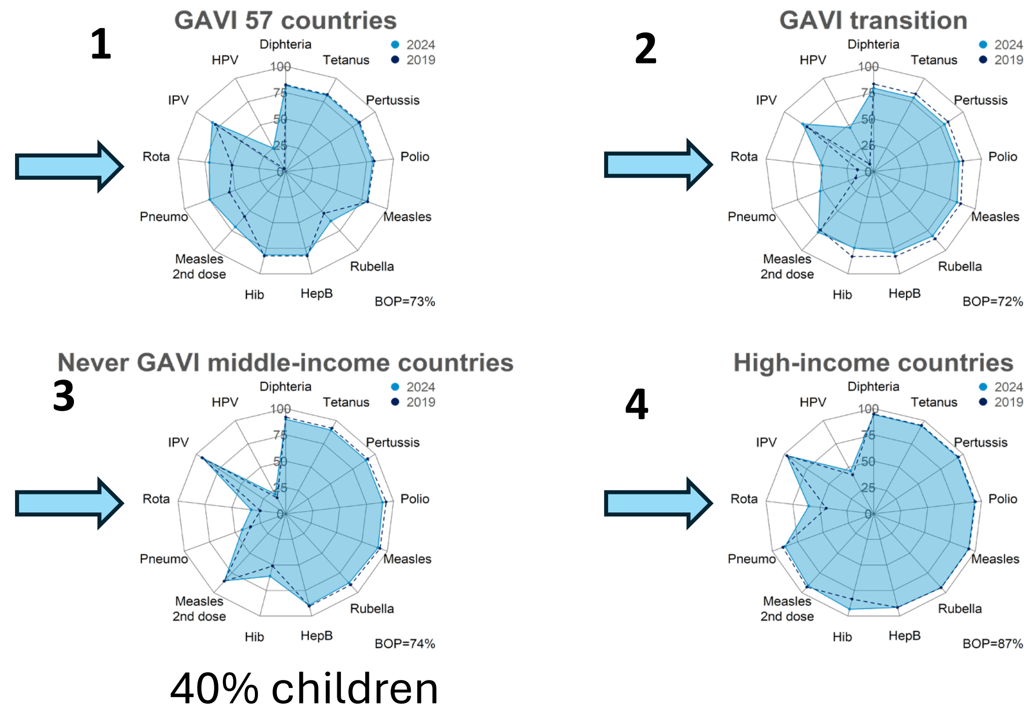


Country / Region	Year	Estimated Coverage (%)	Notes / Source
Global (all countries, weighted average)	2023	~55%	WHO/UNICEF estimate global rotavirus coverage ~55%
Africa Region (WHO Africa, among introduced countries)	2023	~61%	Coverage rose from ~5% in 2012 to ~61% in 2023

Rotavirus Breadth of Protection (BOP) in MICs

- Between 2018-2027 rotavirus vaccines can avert 600,000 deaths and ~$900M costs in 73 Gavi supported countries
- Between 2020 and 2029 rotavirus vaccines can avert 38,000 deaths and ~$1.2B costs in 63 non-Gavi MICs

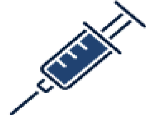
Lagging BOP in MICs that were not Gavi eligible (especially Rota, PCV)



Breadth of protection = ((DTP3 x 3) + HepB3 + Hib3 + IPV1 + MCV1 + MCV2 + PCV3 + POL3 + RCV1 + RotaC + HPV) / 13

Duncan Steele, 15th Rotavirus Symposium

Context for Immunization is Changing



- Attack on efficacy, safety and necessity of immunisation persists beyond COVID-19 and is stoked by global role-players
- Climate and environmental change, creates new disease patterns and decreases coverage
- Mistrust in science fuelled by misinformation spread by social media
- Zero-Dose children increasingly hard to reach because of fragile, conflict and vulnerable settings
- Increasingly fragmented supply, diminished ODA funding for Gavi and countries, driving market complexity and decreased access
- Competing priorities for health e.g. NCDs

Think differently

Global Health Governance and Ecosystem

Streamlining global structures

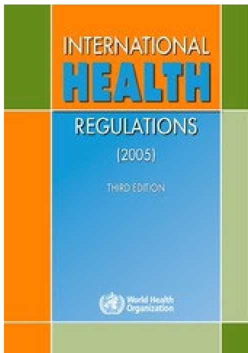
- Who does what best
- Who should lead
- Who has the mandate
- What's WHO's role
- Who will fund

- UN Main Bodies
- UN Agencies, funds & programmes
- Multilateral organisations
- Intergovernmental political forums
- Global public-private partnerships
- Philanthropic organisations
- Civil Society organisations
- Professional associations
- Academic institutions
- Pharma companies

Global Health & UN Entities under review

- **WHO**: Streamlined, regional and country emphasis, norms and standards, prioritised programmes e.g. emergencies and surveillance, targeted R&D, global coordination role
- **Gavi & Global Fund**: Exploring operational and financial efficiencies and strategic alignment
- **UN80 reforms**: Strengthen UN's core role in humanitarian and conflict response, streamline, consider merging agencies
  - UNAIDS: ~55% staff reduction and discussions about HIV functions being absorbed by WHO or UN programmes by 2030
  - UNFPA & UN Women: Consider merger
- **Humanitarian Agencies** (UNHCR, WFP, OCHA): Greater integration of health and humanitarian responses
- **Sustainable Surveillance**: No funding mechanism from Pandemic Agreement & Multiple roleplayers
- **Sunset strategies**: Suggestions that sunsetting strategies are required for some agencies (Gates Foundation 2045)

New Global Health Agreements



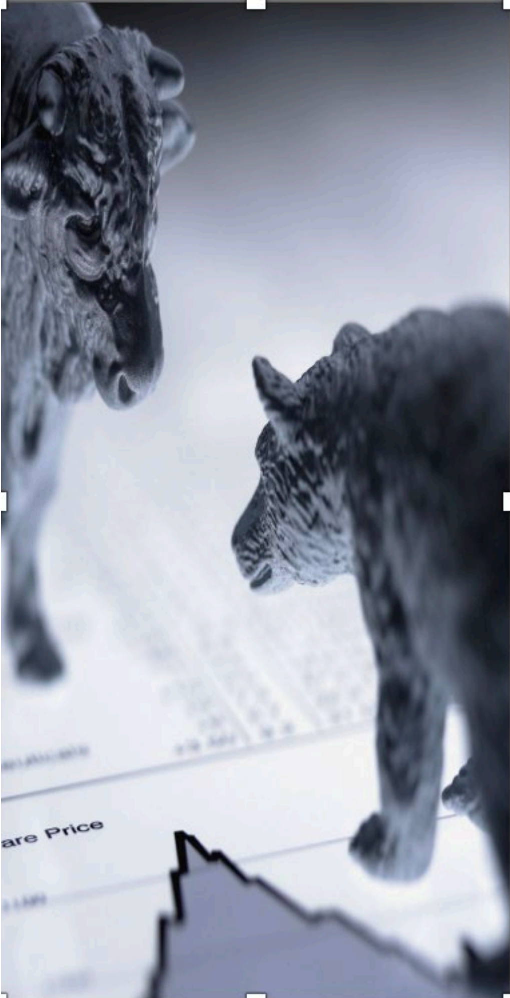
- **WHO Legal agreement** adopted 1969, revised 2005
- **IHR**: Definitions and rules for countries to prevent, detect, respond to, control and communicate on **public health emergencies of international concern (PHEIC).**
- Ebola outbreak (2014) and COVID-19 pandemic (2020) exposed serious weaknesses and IHR revised and approved 2025
- **New category of pandemic emergency**, and new reference to health products

- **2025:** WHO Member states approved **Pandemic Agreement** on pandemic prevention, preparedness and response
- Residual questions
  - Financing and logistics
  - One health integration
  - Accountability and legal framework
  - Pathogen Access & Benefit Sharing (PABS)

Bigger emphasis on Regional Institutions: e.g. Africa CDC

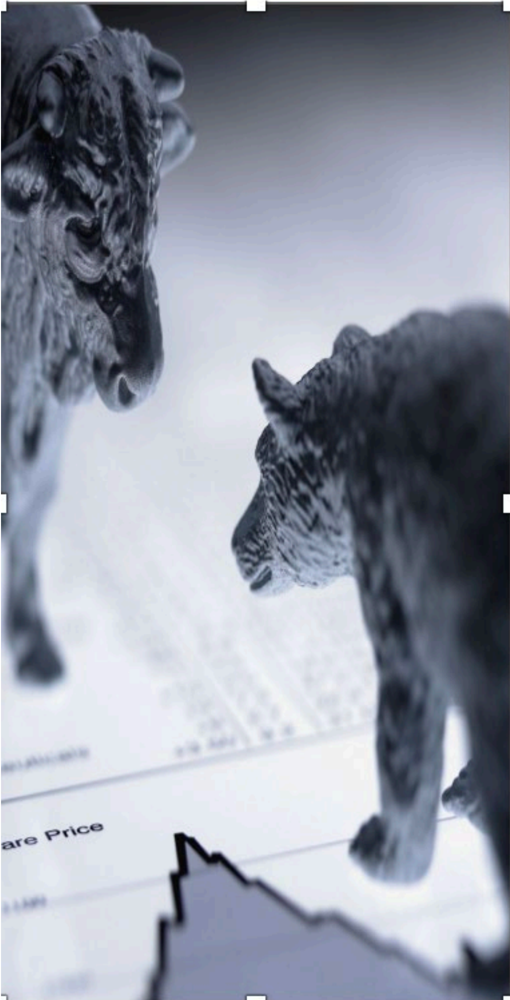
- Strengthen Africa's public health systems to prevent, detect & respond to disease threats
- AU agency with Statute, budget, funding
- Epidemic intelligence systems
- Emergency operations & surge teams
- Vaccine procurement & regional manufacturing strategies
- Partners: WHO, Gavi, UNICEF and others

Rethinking Global Health Funding



- **Domestic Resource Mobilization (DRM)**
  - Prioritization of health in LMIC's fiscal policies and budgets
  - Improving efficiency and expanding income from smart taxation (Sugar, tobacco)
  - Diaspora remittances
- **Innovative Financing Mechanisms**
  - Debt swaps: e.g., "debt-for-health" where debt relief is exchanged for local health spending
  - Airline ticket levies
  - Financial transaction taxes earmarked for health
- **Blended Finance**
  - Combining public funds, philanthropy, and private investment
- **Solidarity & Philanthropic Models**
  - Private philanthropy (e.g. Gates Foundation, Wellcome Trust)
  - Donor countries: Existing ODA including revised US policy, countries and new countries (e.g. Saudi)

Rethinking Global Health Funding



- **Global Health Security / Pandemic Financing**
  - Dedicated funds (like Pandemic Fund) for preparedness & response
- **Performance-Based Financing (PBF)**
  - Funds tied to achieving measurable results e.g. social impact bonds
- **Regional Pooled Financing**
  - Regional bodies (Africa CDC) create pooled procurement and financing mechanisms
- **Derisking investments for essential health products in LMICs**
  - Volume and procurement guarantees (e.g. MedAccess)
  - Advance Market Commitments: donors guarantee to buy vaccines/drugs once developed

Rethinking Global Health Research for LMICs

- **Research concentrated in high-income countries**, disconnected from LMIC needs
- Need for **strong funded national research ecosystems in LMICs** that:
  - Prioritize national and regional health needs
  - Strengthen local/global south research leadership
  - Integrate research with health systems for rapid uptake
  - Focus on leapfrogging technologies and interventions
  - Pivot quickly to emergency research when needed
  - Strengthen regulatory and ethics oversight

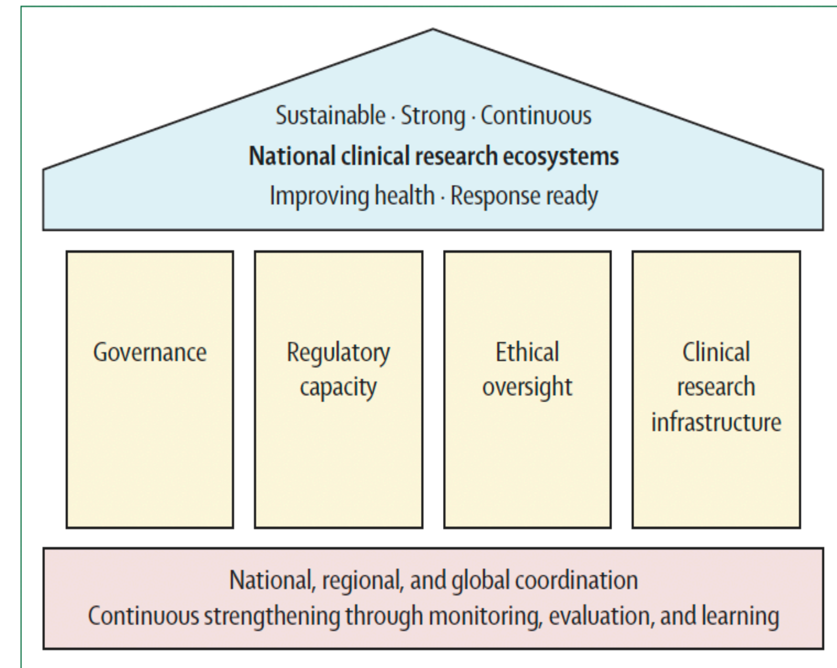


Figure 1: **Essential pillars of a model national clinical research ecosystem**
Reproduced from WHO,[15] by permission of the authors.

Higgs E. Lancet GH. September 2025

Rethinking technologies: Novel Combination Vaccines

Challenges

The potential for new vaccines to address major public health challenges, including AMR, **has never been greater.**

But immunization schedules are already **saturated** with multiple vaccines often administered at the same visit.

Potential solutions

Combination vaccines could **simplify immunization schedules, increase coverage,** allow **introduction of new vaccines, and enhance efficiency** of immunization programs.

However – they will likely **cost more.**

Opportunities

REGULATORY: Evaluate simplifying licensure pathways, focusing on the benefit/risk of a combination as a whole

POLICY: **Articulate public health impact** of combinations relative to stand-alone components

ECONOMIC: Assess full health impact and economic value of combinations

COMMERCIAL: **De-risk investment** by providing clarity on priorities, approval and policy pathways

Build on the successful experience with DTP-Hib-HepB-(IPV) and MR combinations

PATH

World Health Organization

Novel Combination Vaccines: Example of Hexa and Rotavirus injectable

Regimen	B	M1	M2	M3	M4	M5	M6	M7	M8	M9	M12	M15	M18	M24	Y3	Y4	Y5
Hexa		●	●	●							▬	▬	▬			▬	▬
Rota inj. 2-6M, 3ds		●	●	●													
Rota inj. 2-6M, 2ds		●	●														
Rota inj 7-71M, 3ds								●	●	●							
Rota inj 7-71M, 2ds								●	●								

Hexa and Rotavirus inj.

Criteria	Compatibility	Overall Compatibility
Geography	• Global Overlap: At risk geographies overlap globally (all countries in all regions)	Very High Could save 2 or 3 oral doses of rotavirus vaccine and improve rotavirus protection

Number and timing of doses	• Very High: Component vaccines or candidates can be administered at the same ages and intervals for all target populations
	• If the combination is delivered according to the schedule for Hexa,
	  • In settings using a different DTP-containing vaccine for boosting, this would give 1 unnecessary dose of the rotavirus vaccine compared to a 2-dose rota schedule, but no unnecessary doses compared to a 3-dose rota schedule
	  • In settings using Hexa for the 2YL boost, this would give 1 or 2 unnecessary doses of the rotavirus vaccine, depending on schedule	

Ages to protect	• Very High: The combination can be delivered on a schedule that does not delay or otherwise reduce protection against any of the diseases targeted by the combination • Vaccination can begin at the recommended ages	
Program effects	• Very High: Eliminates one or more EPI injections without creating programmatic complexities • Combination could eliminate 2 or 3 EPI injections or doses of oral rotavirus vaccine • Combination would be less suitable for the M12 DTP-containing vaccine boost. In practice, many countries already use different formulations for this boost.	

Use of AI in vaccine development and immunisation programmes Modified: SAGE and UNICEF Sept 2025

Area	Applications
Health worker guidance & decision support	• Faster diagnostics using AI powered algorithms • Chatbots for communications training
Communication & combating misinformation	• Social listening platforms for infodemic management • Chatbots for disseminating health messages
Service delivery microplanning	• GIS based microplanning using AI-driven predictive analytics
Supply chain optimization	• Automation of vaccine forecasting to reduce stockouts & wastage • AI models for route optimization & distribution mapping
Enhanced disease surveillance	• Optimizing lab locations through geospatial estimates • Electronic health records for AEFI surveillance • AI predictive models for outbreaks
Enhanced vaccine development	• Genomic sequencing, epitope mapping, mRNA platforms

“

…The fight against disinformation is a fight for global health, especially as we continue to rely on vaccines to protect lives and prevent future pandemics.

Thank you to the organisers of the 15th Rotavirus conference
WHO: Kate O’Brian
Gates Foundation: Duncan Steele
MedAccess: Michale Andersen
Wits RHI colleagues