Building Resilience to Emerging Infectious Diseases: Political and Governance Lessons from Eradicating Polio[1,2]

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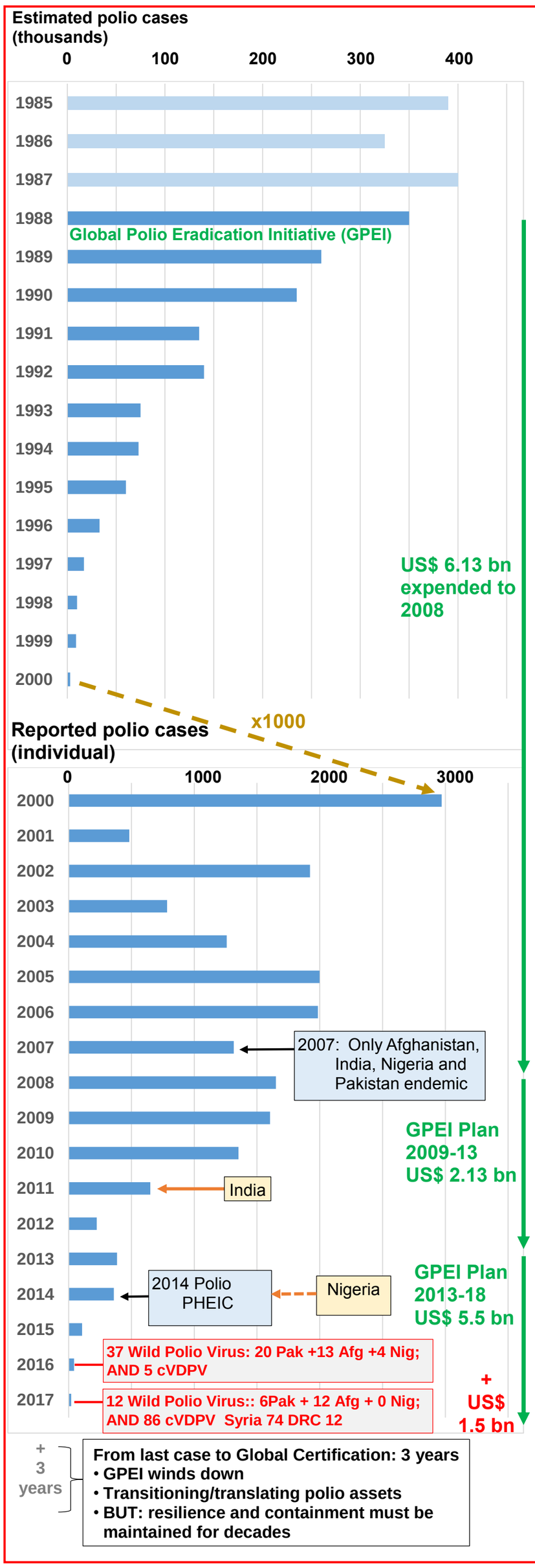
Background

The Global Polio Eradication Initiative (GPEI) has been the longest, largest, most complex and expensive global health initiative in history. With over US$ 15 billion spent and over 2.5 billion children vaccinated during 30 years, worldwide cases of infection caused by the wild polio virus (WPV) reduced from c. 350,000 in 1988, prevalent in 125 countries, to 20 in 2017 – 12 in Afghanistan and 8 in Pakistan. However, the oral polio vaccine (OPV), made with live, attenuated WPV, can generate circulating vaccine-derived polio virus (cVDPV) causing polio cases, especially where levels of vaccine coverage are low. A worldwide switch to inactivated polio vaccine (IPV), given by injection, is being delayed by a global IPV shortage.



References and footnotes

1. Publications on the details of this project can be found at: http://graduateinstitute.ch/ghp/polio
2. This project is supported by the Bill & Melinda Gates Foundation
3. *"With polio eradication, we have a clear focus in mind. With respect to resilience, if there are no crises how do you know a system is resilient?"* Project interviewee, Germany

Structure strongly influences function

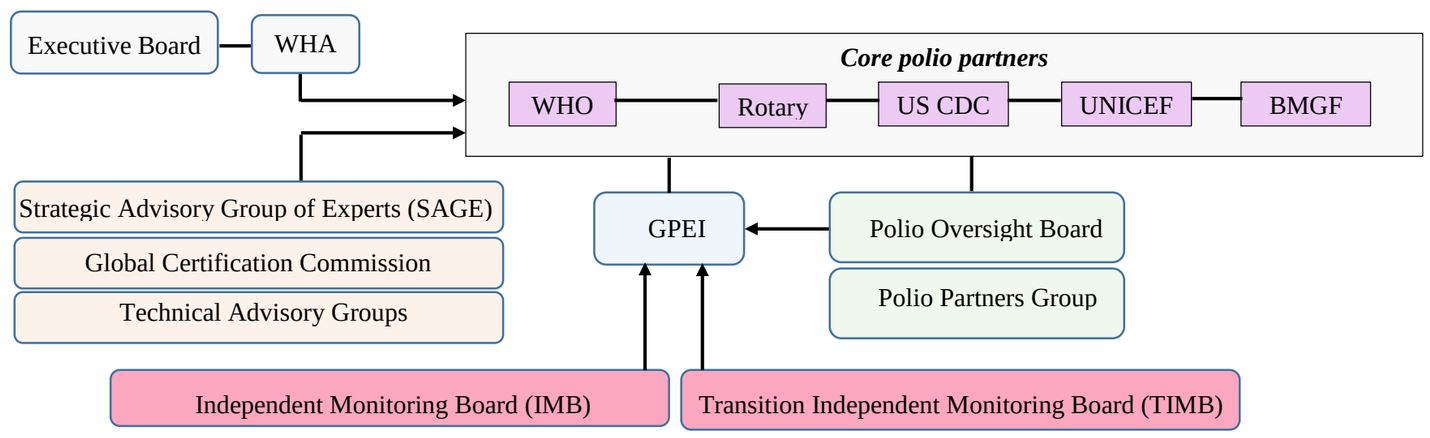
Eventually everything connects – people, ideas, objects…
the quality of the connections is the key to quality per se. Charles Eames

Leadership: Monolithic versus partnership

- **Disease eradication programmes with a single or strongly dominant leader have demonstrated mixed results (e.g. WHO: smallpox and yaws; Rockefeller Foundation: hookworm, malaria and Yellow Fever).**
- **GPEI is a multi-partnership: Rotary, WHO, UNICEF, US Centers for Disease Control; Bill & Melinda Gates Foundation.**
  - **Partner roles are diverse and largely complementary: partnership creates a collective, synergistic dynamic that is mutually reinforcing, capable of sustaining effort over a long period and able to mobilise political, financial and human resources.**

Network governance: balancing complexity, flexibility and accountability

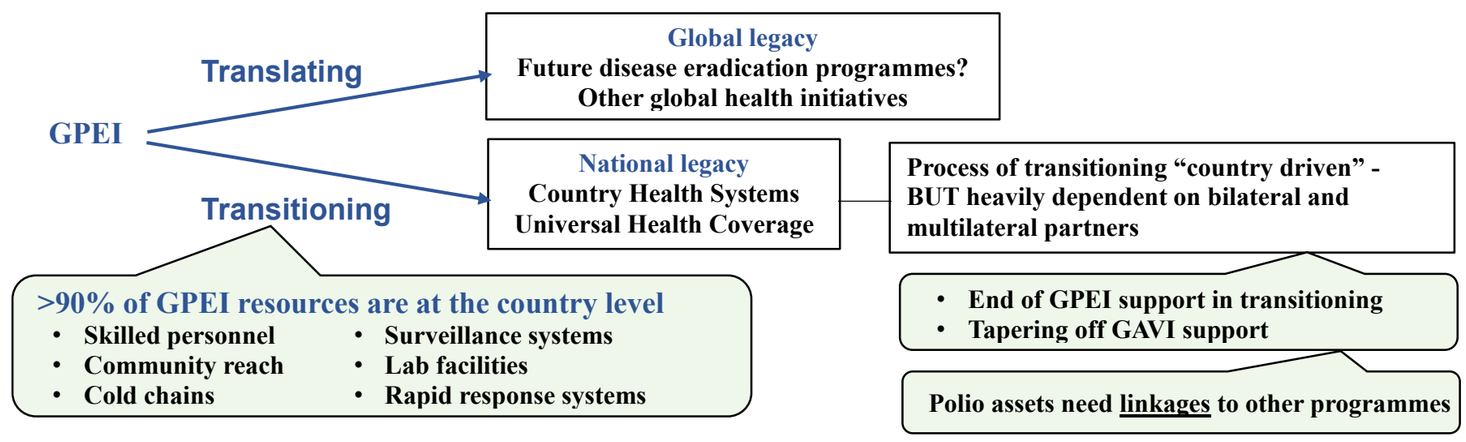
- **GPEI has a complex governance structure: effectively a form of network governance with the GPEI Secretariat serving as a network administrative organization.**
  - **GPEI is accountable to World Health Assembly (WHA) through WHO and also through partners' structures (e.g. Polio Oversight Board, Polio Partners Group) and subject to oversight by the Independent Monitoring Board (IMB) created 2010 and Transition Independent Monitoring Board (TIMB) created 2016.**
  - **These evolving structures show the flexibility of the GPEI: the creation of the IMB, in particular, was an innovative solution to the continuing challenge of completing eradication (the 'long tail' of the last few cases) and has been a game-changer. The IMB has acted as a strong, constructive critic of the GPEI and as a strong stimulant for international action. The IMB prompted polio transmission to be declared a Public Health Emergency of International Concern (PHEIC) in 2014 under the International Health Regulations.**



Resilience and containment capacities are issues for all regions

- **Low- and middle-income countries (LMICs) may need assistance to build resilience and containment AND to sustain them – through and beyond transition. The assets built by the GPEI for polio eradication can form the basis of resilient public health/infectious disease control systems – as shown by Nigeria's response to Ebola crisis.**
- **All regions must sustain resilience and containment. e.g. WHO-EURO eradicated polio in 2002, BUT:**
  - **2010 Tajikistan – WPV polio outbreak spread to 3 other countries; > 450 cases, 29 deaths**
  - **2013 Israel – WPV isolated in 30 sewage samples from 10 sampling sites**
  - **2014 Belgium – release of 45 litres concentrated live poliovirus solution from manufacturing site**
  - **2015 Ukraine – 2 cVDPV polio cases**
  - **2017 Syria – 74 cVDPV polio cases**

Transitioning must be planned early, coordinated with other global health actions



- **Policies and strategic plans for exit from infectious disease control programmes and for the transitioning of capacities from dedicated programmes to country-based integrated systems are vital and must be done early.**
  - **GPEI wind-down means massive loss of finances/personnel in WHO and in countries, with potential major impact on routine immunization, infectious disease resilience and health security, as well as on WHO.**
  - **Transition of polio assets to countries can have major benefits – e.g. for health system strengthening, universal health coverage, health security, Expanded Programme on Immunization, IHR capacity**
  - **Some LMICs are simultaneously experiencing transitioning/graduation from GAVI support for vaccination, while losing GPEI support and attempting to improve their health systems from a low base – hence major resource investments by development assistance partners will be essential.**
- **Translation of lessons from disease control and eradication programmes is vital, e.g. :**
  - **Avoid the long tail: start tackling the most difficult (e.g. hard-to-reach) places very early in the programme**
  - **Political will is central (e.g. India's success in eradication) – it will be critical for sustaining resilience.[3]**