



After polio: Imagining, planning, and delivering a world beyond eradication

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ARTICLE INFO

Keywords:

Global health
Poliomyelitis
Global Polio Eradication Initiative
Nigeria
Pakistan

ABSTRACT

As the world comes closer to the eradication of polio, the question of preparing for life after this debilitating disease becomes increasingly pertinent. This paper focuses on on-going institutional attempts to conceptualise, plan, and deliver a world after polio. Drawing upon interviews with global health officials and ethnographic fieldwork with eradication initiatives in Nigeria and Pakistan, I explore how international donors are transitioning towards life after the disease and the curtailment of the substantial resources it has successfully mobilised. Focusing specifically on the wind-down of the Global Polio Eradication Initiative, I critically examine key risks emerging from polio transition and highlight a series of spatial and political assumptions about the emergent post-polio contours of global health that have largely been obscured by attempts to render transition planning as little more than a technical exercise.

1. Introduction

The international community is closer than ever before to accomplishing the eradication of poliomyelitis (polio).¹ In 1952, three years before the discovery of Jonas Salk's effective vaccine against this debilitating disease, the United States alone recorded 58,000 new cases of polio (Oshinsky, 2005). In 2017, a mere 22 new cases of the disease were documented worldwide (GPEI, 2018a). Once associated with paralysis, deformity, and lengthy confinement in an “iron lung” ventilator, polio is now close to joining smallpox as only the second infectious human disease to ever be eradicated (Smallman-Raynor and Cliff, 2006; Stepan, 2011).

Founded in 1988, the Global Polio Eradication Initiative (GPEI) has played a decisive role in these eradication efforts. GPEI is a public-private partnership that conducts targeted immunisation against the poliovirus that causes polio and also effectively cross-subsidises primary health systems by permitting polio-funded staff to deliver routine immunisations and postnatal care at, or around, the same time as administering polio vaccines (Aylward and Tangermann, 2011; Cochi et al., 2014).² Between 1988 and 2035, Duintjer Tebbens et al. (2010) estimate the incremental net benefits arising from GPEI activity will total US\$40–50 billion in avoided polio treatment costs alone. As the

world comes closer to zero new cases of polio, however, the case for continuing investment in and through GPEI has weakened. Indeed, this archetypal global health partnership has already begun winding down annual expenditure – totalling US\$1.12 billion in 2017 – across 16 countries where polio has recently been eliminated or remains endemic; support will cease in non-endemic countries from 2019.

Despite the success and scale of this initiative, the nascent geographical literature on global health has said little about GPEI efforts to ameliorate the uneven incidence of vaccine-preventable diseases (Brown et al., 2012; Herrick, 2016, 2017a).³ The pivotal role of GPEI in securing global health, and the concomitant risks to allied health interventions associated with its wind-down, ought not to be so easily overlooked. The initiative's portfolio of activities, for instance, extends far beyond polio. GPEI funds thousands of immunisation staff worldwide who spend the majority of their time working against vaccine-preventable diseases *other than* polio. Alongside the WHO's Expanded Programme on Immunisation (EPI) and Gavi, the Vaccine Alliance, GPEI has distributed vaccines that save two to three million lives every year (Clemens et al., 2010). Partly as a result of these collaborations, basic immunisation coverage is now at record levels, with 86% of all children in 2016 receiving three doses of the benchmark diphtheria-tetanus-pertussis (DTP) vaccine (WHO, 2018). However, it is also

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¹ I take eradication to be the “permanent reduction to zero of the worldwide incidence of infection caused by a specific agent as a result of deliberate efforts” (Dowdle, 1998, p. 23).

² GPEI partners and donors include the World Health Organization (WHO), Rotary International, the US Centres for Disease Control and Prevention, the United Nations Children's Fund (UNICEF), and the Bill and Melinda Gates Foundation.

³ This is surprising given the attention paid to contemporary collaborations that have catalysed advances in the fight against other neglected diseases (Craddock, 2012, 2015).

important to acknowledge that the gains brought about through the initiative remain fragile and spatially uneven (WHO, 2011, 2016, 2017a). Afghanistan, Nigeria, and Pakistan remain polio endemic despite substantial GPEI investment over three decades. Progress made by GPEI and partners against polio and other vaccine-preventable diseases is precarious in these and other national and sub-national contexts because of lukewarm government support, community distrust, and conflict (Renne, 2014; Kennedy and Michailidou, 2017). An attentiveness to the salient role that place plays in determining the success of health interventions is essential if we are to understand how the important work of GPEI comes to be enabled, contested, and constrained within and between different geographies (Brown and Moon, 2012; Neely and Nading, 2017; Taylor, 2017).

Given the fragility of the health gains outlined above, including those brought about through the cross-subsidising of non-polio activity, global health professionals are beginning to frame the eradication of polio and the “sunset” of GPEI as strategic concerns in their own right (GPEI, 2016; Taylor, 2016; Ingram, 2005). The eradication of polio was meant to safeguard global health; in reality, the institutional, financial, and operational vacuum that polio and GPEI are set to leave behind suggest, if anything, *ongoing* vulnerability to both local and global re-emergence of disease. Rutter et al., (2017, p. 291–292) note that “[t] here is not widespread understanding or agreement on the true extent of the risks ... that the end of the polio programme entails.” Likewise, Kretsinger et al., (2017, p. 312) speculate that “[t]he consequences of losing polio assets ... include the likely reversal of EPI progress in priority countries as well as globally.” What, then, can communities, governments, and international donors do to ensure that local and global health security are not adversely impacted once polio funding ceases? How can GPEI implement wind-down so that all people, irrespective of geography, benefit from its historic polio and public health investments? What, in other words, will happen to global health *after* polio?

In examining these questions, I want to look beyond the “culture of optimism” (Closser, 2012, p. 388) that pervades official pronouncements anticipating *when* the end of polio will occur and, instead, focus on how the world *beyond* the certification of eradication is being both conceptualised and brought into being.⁴ To speak of the future is, I acknowledge, to run the risk of glossing over the immense human and financial cost of the final stages of polio and also conflating what *may* be with what *will* be. However, as Groce et al. (2014) demonstrate in their call for the global community to remain committed to those who have survived polio at the commencement of “a post-polio world,” critical attentiveness to the institutional, spatial, and geopolitical contours of emergent global health futures is needed too.⁵ Fixating hubristically on the “when” of polio eradication, I suggest, distracts

⁴ Some have questioned the very feasibility of eradication. The late Donald Henderson, who oversaw the WHO's smallpox eradication campaign, considered a transition from oral polio vaccine towards a more expensive, but superior, inactivated polio vaccine (administered percutaneously) as the only hope for eradication (Henderson and Klepac, 2013). Such a transition, and the success of eradication, was thought unlikely given projected costs. However, transition to the inactivated vaccine began in 2015 and will be complete by 2019.

⁵ I use “post-polio” and “after polio” – terms in common usage in the professional circles discussed here – as shorthand for the new settlement of global health interests and concerns commencing after the successful global certification of polio eradication (i.e. the reduction of new infections to zero). It is important to emphasise here that while *new* cases of polio are at historically low levels, and look set to be reduced to zero imminently, an estimated 12–20 million people worldwide continue to live with polio sequelae brought about by *past* exposure to the wild poliovirus. A post-polio world, in other words, will not immediately be a world *without* polio (particularly as vaccine-derived poliovirus outbreaks may still occur); it is a liminal state, free of new wild infections *now* but *not yet* free of the lasting impacts of the disease.

critical attention away from the parallel planning, financing, and delivery of a *post-polio global health* that is already under way, including germane discussions concerning “who,” “what,” and importantly, “where” ought to be strategically prioritised by thinly-stretched global health actors both before and after polio eradication (Del Casino et al., 2014; GPEI, 2017a, 2017b; Herrick, 2017b; WHO, 2017b). The scope, ambition, and consequences of these *political* efforts to prepare for and deliver a world beyond eradication remain poorly understood.

To explore the planning and delivery of a world after polio, I take as my focus international efforts to transition extant GPEI-funded assets, programmes, and investments onto a post-polio footing. In doing so, I draw upon a set of 36 interviews conducted between 2016 and 2018 with key stakeholders involved in GPEI and national polio initiatives, as well as two periods of extended ethnographic fieldwork conducted over the same period with regional eradication campaigns in northern Nigeria (Borno state) and south-western Pakistan (Balochistan province).⁶ My aim in examining the work of these individuals and institutions is threefold: first, to show how a world without new cases of polio has been affectively framed as an urgent global health goal to be prioritised irrespective of negative externalities borne by other allied health interventions; second, to interrogate how the institutional wind-down of GPEI epitomises and exposes the particular spatial imagination of those attempting to eradicate polio in a technical manner; and, finally, to explore the socio-spatial limits of this technical delivery of eradication as they are experienced and contested locally in Nigeria and Pakistan.

2. Now and not-yet: prioritising eradication and deferring immunisation strengthening

Polio campaigns have long concerned *more* than merely eradicating polio. In 1988, the World Health Assembly declared that eradication would only be possible through the “continued strengthening of the [EPI] within the context of primary health care” (WHO, 1988). GPEI (2013, p. 56) later reaffirmed this collaborative ambition by targeting that “at least 50% of polio-funded field personnel's time [by 2014] will be devoted to specific, measurable activities to help national authorities strengthen immunisation systems and services.” Many polio investments strengthen immunisation systems and vice versa. In a study of polio-linked projects in ten countries, for instance, Van den Ent et al. (2017) found that 47% of staff time was spent delivering routine immunisations other than the polio vaccine. The Global Polio Laboratory Network (GPLN) of 146 WHO-accredited laboratories in 92 countries examines suspected cases of polio, but also tests for measles, yellow fever, and tetanus (De Gourville et al., 2006). Polio rapid response teams have been temporarily re-purposed to tackle the emergence of other diseases, including the 2014 Ebola virus outbreak in Nigeria, and over 20 million polio-supported social mobilisers communicate routine immunisation messaging to communities beyond the reach of other health services (Taylor, 2015; Vaz et al., 2016).

However, critical voices have sought to problematize recent transformations in the intertwining of polio eradication and immunisation efforts (Henderson, 1998a; Whitty, 2014). Eradication, they note, has a definite endpoint – the certification of zero new global cases of polio over three years – after which the mutually beneficial relationship between eradication and routine immunisation campaigns will end. “The hope and hype of zero have acted to prioritise ending polio as the more pressing strand of global health activity,” a Sudanese immunisation

⁶ Institutional ethical approval for the interview-based and ethnographic research was granted by Queen Mary University of London, and this was followed by approvals from the Nigerian and Pakistani health ministries. All participants provided written informed consent. Interviews were conducted in English, French, Hausa, Kanuri, and Balochi, recorded, and then translated by trained field assistants. Interviewees remain anonymous at their request.

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