

The Global Context of Vaccine Refusal: Insights from a Systematic Comparative Ethnography of the Global Polio Eradication Initiative

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Abstract

Many of medical anthropology's most pressing research questions require an understanding how infections, money and ideas move around the globe. The Global Polio Eradication Initiative (GPEI) is a \$9 billion project that has delivered 20 billion doses of oral polio vaccine in campaigns across the world. With its array of global activities, it cannot be comprehensively explored by the traditional anthropological method of research at one field site.

This paper describes an ethnographic study of the GPEI, a collaborative effort between researchers at eight sites in seven countries. We developed a methodology grounded in nuanced understandings of local context but structured to allow analysis of global trends. Here, we examine polio vaccine acceptance and refusal to understand how global phenomena—in this case, policy decisions by donors and global health organizations to support vaccination campaigns rather than building health systems—shape local behavior.

Introduction

Many of medical anthropology's most current and important research topics involve institutions, actors, and processes affecting many parts of the world simultaneously. In order for anthropologists to analyze these phenomena, there is a need for strategies that draw on the strengths of anthropological insight while allowing for broad geographical scope.

The Global Polio Eradication Initiative (GPEI) is among the largest public health projects ever: in the past 25 years, the project has reached into over 100 countries to deliver 20 billion doses of oral polio vaccine in special campaigns. The GPEI has a number of attributes that make it an ideal subject for understanding how global flows of ideas and resources work in a major development project. It has a clearly defined goal: total eradication of poliovirus. It has a well-defined center linking multiple international organizations. Its "magic bullet" standardized methodology includes both the dispersal of oral polio vaccine, and intense "social mobilization" aimed at getting parents to enthusiastically accept the vaccination of their children. Its global reach extends from laboratories and offices in London, New York, Geneva, Atlanta, and Seattle, through capital cities across the world, and down to local health posts and households.

As an object of study, the GPEI is both historically important and anthropologically rich. Yet as an enormous project with a great array of activities across the world, it is not easily analyzed by the traditional anthropological method of a lone researcher carrying out extended research at one field site.

In this article, we describe a research project aimed at assessing the impact of the GPEI on local health systems. For this work, we developed a study design we call systematic comparative ethnography. This methodology is grounded in nuanced understandings of local context, garnered by experienced researchers—yet it also facilitates direct comparison between various field sites and integrated analysis of global trends. In this article, we use an analysis of polio vaccine acceptance and refusal in our study sites to illustrate the power of this method. Because discourses about vaccines are both profoundly local and powerfully shaped by global forces, they form a useful lens for understanding how global factors affect local ideas and behavior.

The work described here was a collaborative effort between researchers at eight research sites in seven countries (Nepal, India, Pakistan, Ethiopia, Nigeria, Rwanda, and Angola). In this paper, we first review traditions of comparative ethnography in anthropology, and describe the methodology of systematic comparative ethnography. Then, we explore public reactions to polio vaccine in our research sites, and describe what these data illuminate about the global causes of locally expressed public distrust.

Methodology: Systematic Comparative Ethnography

Ethnographic Traditions in the Study of Health Projects

Medical anthropologists have in recent years created nuanced ethnographies of global health institutions. From medical schools in Malawi to AIDS awareness workshops in Papua New Guinea, this work shows how the ideas and practices of global health play out in particular local contexts (Wendland 2010; Wardlow 2012).

In attempting to garner an ethnographic understanding of the large and dispersed Global Polio Eradication Initiative, though, we required a method that involved more than ethnographic research in one site.

Recently, attention has been given to 'multi-sited research' as a way of addressing global phenomena. This method, which "trac[es] a cultural formation across and within multiple sites of activity" (Marcus 1995:96), enables anthropologists to go beyond a field site fixed in one place, and follow ethnographic leads across space to tell the whole story (Markowitz 2001; Hannerz 2003).

The "follow the project" method of multi-sited ethnography works well if the focus of inquiry is a global health project that involves flows of policy and money to a specific country (Closser 2010; Briggs and Mantini-Briggs 2003). But an anthropologist attempting to understand the GPEI as a whole would be faced with the task of gaining an ethnographic understanding of a project operating in well over 100 countries, an object of study too big and too dispersed for the lone wolf anthropologist. In understanding large development initiatives—increasingly the modus operandi for health aid—a wolf pack is needed.

Traditions of Comparative Ethnography

Early anthropologists frequently conducted comparisons across human groups, often relying on the written reports of others (Radcliffe-Brown 1940; Lévi-Strauss 1969; Morgan 1870; Boas 1896). But over time, with good reason, increasing emphasis was placed on deep knowledge of particular fieldsites. In 1954, Fred Eggan asked, "If each anthropologist follows the Malinowskian tradition of specializing in one, two, or three societies and spends his lifetime in writing about them, what happens to comparative studies?" (Eggan 1954:754). Sixty years later, it is clear that the answer is, at least in part, that they go out of vogue.¹

Recent comparative ethnographies relying on in-depth research pull together data from several ethnographic studies, conducted using somewhat different methodologies (Kingfisher and Goldsmith 2001; Hodgson 2002; Whyte 2009). The

¹ Certainly comparative work is still conducted (Mace et al. 1994), but it is less central to the anthropological project than it once was.

comparative aspect of the project is usually not built into the design, but is rather a product of shared interest by researchers working across different field sites. As Whyte and Ingstad put it, the goal is to “weav[e] links of relevance between located worlds, and between them and imagined ones of different scale” (Ingstad and Whyte 2007:2). But in comparative ethnography, the fact that researchers do not systematically coordinate their methods and questions—and in some cases even begin the process of collaboration and comparison only after doing fieldwork—limits the power of the analysis.

Systematic Comparative Ethnography

Systematic comparative ethnography uses ethnographic methods to collect data that are both rich and systematically comparable by following a single well thought-through study design across multiple research sites. At each site, researchers use the same methods, investigate the same phenomena, and ask the same questions. Such work has a long history in anthropology. For example, in the late 1950s a group of anthropologists carried out the “six cultures project.” This ethnography of child rearing and socialization was a collaborative effort between anthropologists using the same methods at six very different sites (Whiting, Child, and Lambert 1966). In medical anthropology, RAP methods have been used to make systematic comparisons across different sites (Scrimshaw and Gleason 1992). And more currently, cognitive anthropologists commonly use the same methodologies at different sites to understand differences in human cognition and behavior (Henrich et al. 2010).

Systematic comparative ethnography has several advantages over multi-sited methodologies and over traditional comparative ethnography. It is carried out in multiple sites carefully chosen for their ability to address key research questions. The comparative aspect of the study is built into the research questions, the methods applied during fieldwork, and the systematic analysis that follows.

Our work is unique in that, rather than looking at a general phenomenon (like child rearing), we used systematic comparative ethnography to focus on a single institution with activities across the globe. Doing so facilitates analysis of the global effects of decisions made in GPEI nerve centers in places like Geneva and Seattle.

In developing our methodology, we drew on the methods of a systematic comparative ethnography that focused on AIDS and marriage, and work by qualitative researchers in public health examining the activities of the Measles Initiative in several countries (Griffiths et al. 2010; Hirsch et al. 2010).

Our study was a collaborative project; experienced researchers each focused on one of the eight study districts. We selected these study districts to represent a range of very different contexts. Some were in the midst of conflict; others were recovering from recent conflicts; and others were relatively conflict-free. Some had

comparatively strong government health systems; others had health systems that were barely functioning. In some study districts, polio eradication was a highly visible and active presence; in others, its activities were limited to a few days per year. Yet all of the districts were tied together by being targets of the GPEI.



Figure 1. Qualitative case studies.

Researchers with overlapping yet distinct disciplinary backgrounds collaborated in developing and carrying out the research. The anthropologists, sociologists, and health systems researchers on our team had strong understanding of their study areas, both their larger cultural contexts and their health bureaucracies. In every case, these lead researchers employed additional collaborators and research assistants at their field site. At each site, the research team had a wealth of knowledge about the culture and politics of local health systems; strong language skills in the languages of international planners, local bureaucrats, and recipient populations; and extensive experience in qualitative research.

In this multidisciplinary research, we all brought different strengths and backgrounds to the table; yet our methodology was firmly based in anthropology, including extensive use of participant observation. We developed a 66-page study guide (included in the Supplementary Material), piloted in Nepal and Ethiopia, to standardize our work.

While all the researchers on our team were experienced qualitative health systems researchers, not all had carried out ethnographic methods such as conducting

participant observation and creating rich, detailed fieldnotes. We provided one-on-one direction and advice on these methods as needed.

Our goal was to create a body of knowledge that was ethnographically rich but also systematically comparable. Insofar as possible, researchers in all sites aimed to use the same methods and ask the same questions—with context-driven modifications and adaptations to the design as appropriate. We describe in more detail elsewhere some challenges we faced in practice, as well as modifications necessitated by security and other considerations (Closser 2012). We relied on three major methods to collect data: document review, participant observation, and interviews.

Document review. At each site we collected as many documents as possible from a standardized list (for example, at each site we collected policy documents for routine immunization at the national and district levels). A central research team based in the US coded the documents from all of the case studies in nVivo with a standardized set of codes.

Participant observation. We planned the timing of fieldwork so that we could conduct participant observation in a polio campaign at every site. During the campaign, we conducted participant observation in planning, training, vaccination, and evaluation activities. We also conducted clinic-based participant observation, and accompanied surveillance officers in their work. We took detailed fieldnotes throughout. We coded the fieldnotes from all case studies.

Interviews. At each study site we carried out around 50 interviews with national-level health officials, drawn from the Ministry of Health, WHO, and UNICEF; district-level health officials; ground-level community health workers; and parents of children targeted during the polio campaign. For each of these four groups of interviewees, we followed a standardized interview protocol, with detailed questions and probes that were the same across fieldsites. We transcribed and translated the interviews into English, and coded the transcripts from all fieldsites with the same codes.

All our fieldwork was carried out in the first few months of 2012.² As such, it represents a snapshot of the Global Polio Eradication Initiative, a constantly evolving project, at a single point in time.

Lead researchers from each fieldsite came together after fieldwork for a weeklong meeting where we discussed our findings and sketched out trends. In this meeting, we had conversations about the strengths and weaknesses of our data, about positionality, and about the relationship between what we learned during participant observation and what people said in formal interviews.

A central research team coded the documents, fieldnotes, and interview transcripts

² The one exception was research in Angola, which was carried out in summer 2012.

with a common set of codes (included in the Supplementary Material). This resulted in a body of data that was systematically comparable across fieldsites.

The Global Polio Eradication Initiative

The Global Polio Eradication Initiative is among the largest global health projects in history; its yearly budget currently tops \$1 billion (World Health Organization and UNICEF 2014). It was started in 1988, with the goal of eradicating polio globally by 2000. The difficult goal of eradication has not been achieved, and in 2014, polio persists stubbornly in Afghanistan, Pakistan, and Nigeria, with outbreaks in other parts of the globe.

Polio eradication relies on a strategy of “campaigns” where health workers administer vaccines to children under the age of five, usually door-to-door. While originally planners imagined that a few campaigns per year would be enough to eradicate polio everywhere, the reality has proven much more difficult. The oral vaccine is less effective in South Asia than in the United States (O’Reilly et al. 2012; Grassly et al. 2007). Further, actual implementation of campaigns often differs substantially from the ideal (Closser 2010; Leonard 2011).

Polio eradication leadership has responded by greatly increasing the number of campaigns per year in much of the world. Polio was eliminated from India in 2011 through a program of intense campaign activity—more than 10 per year in much of Bihar and Uttar Pradesh. Currently, much of Pakistan is covered with a door-to-door campaign on a near-monthly basis, and northern Nigeria sees around eight campaigns per year. Areas without polio transmission across South Asia and Sub-Saharan Africa have approximately two campaigns per year, aimed at preventing reintroduction of the virus.

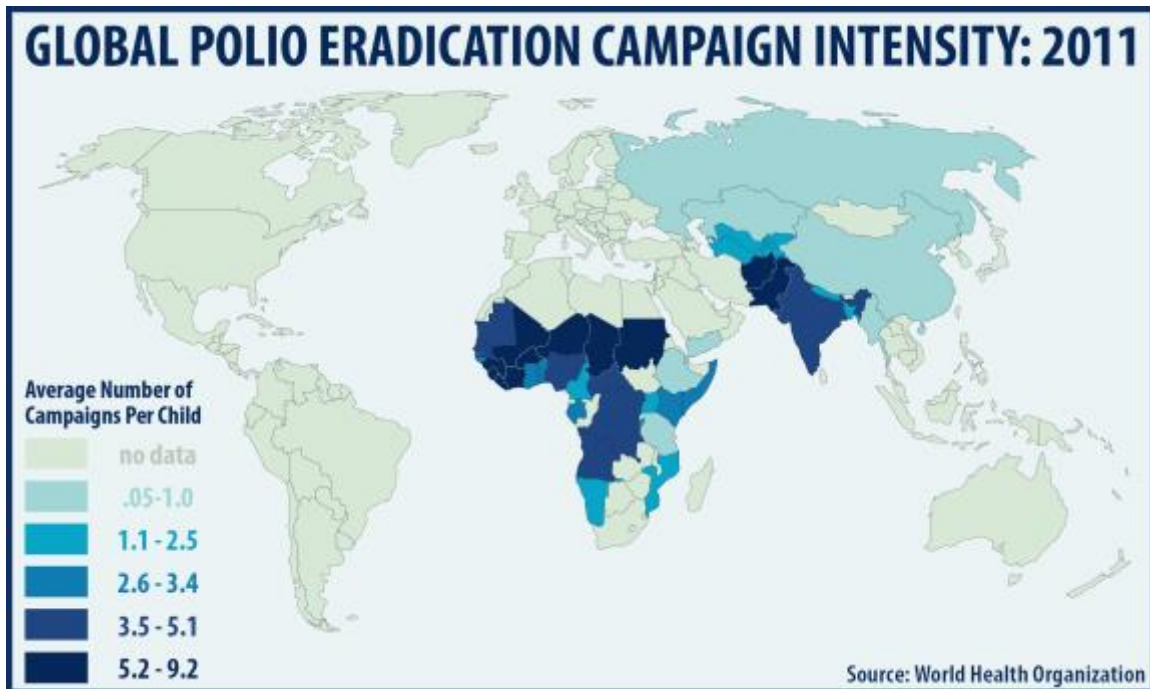


Figure 2. Number of polio campaigns in targeted countries in 2011.

Thus, in many areas of the world with extremely weak health systems, polio eradication leadership made the decision to pour funding, oversight, and international pressure into repeated polio campaigns, rather than attempting to fight the fecal-oral spread of polio by improving sanitation infrastructure, or strengthening routine immunization services. This strategic decision has long been controversial, with detractors claiming that such an approach benefits polio eradication’s major funders (such as the US government) while hurting the countries it was purportedly helping (Taylor, Cutts, and Taylor 1997). Polio eradication leadership tended to claim that on the contrary, campaigns had positive spillover effects on health systems.

This study was designed to test the “spillover effect” hypotheses, examining the impacts—positive and negative—of polio eradication on health systems (Closser et al. 2014). Here, though, we focus on refusal of oral polio vaccine. Our data shows patterns of variation in acceptance of oral polio vaccine—some people embraced polio vaccination, while others accepted it passively or grudgingly, or refused it altogether.

Vaccine Refusals in the Literature

There are a number of nuanced descriptions of vaccine refusal in the ethnographic literature. Here, we focus on work done in poor countries where vaccination forms part of the larger project of “development”: places where infectious diseases are major killers of children, and where international donors and aid agencies often call

the shots. Vaccine refusals in these contexts are driven by a somewhat different set of issues than refusals in places like the United States and United Kingdom (Leach and Fairhead 2007), and it is not our intention to develop a single theory that explains vaccine refusal across high-income and low-income settings.

Anthropological descriptions of resistance to vaccination programs tend to concentrate on the locally specific, multifaceted nature of the factors driving resistance and refusal. Assertions that vaccination refusals need to be understood as rooted firmly in the complexities of local context are common (Streefland 2001; Feldman-Savelsberg, Ndonko, and Schmidt-Ehry 2000).

We identified four common ways of explaining vaccine refusal in the anthropological literature: (1) religion; (2) history and politics; (3) the context of the broader health system; and (4) the delivery of immunizations themselves. Most anthropologists writing on this topic consider these factors to be deeply interrelated.

Religion. Many studies give religion as a reason for vaccine refusals (Streefland 2001; Hardon 2004). In a discussion about the 11-month boycott of polio vaccination in Kano, Nigeria in 2003-2004, both Islamically based resistance, as well as the belief that polio was caused by spirits, are put forth as reasons for refusing vaccination (Leach and Fairhead 2007; Ghinai et al. 2013).

History and politics. Attempts by colonial governments to vaccinate their subjects frequently met with resistance; as some scholars have noted, “memories are deep” (Hardon 2004; Feldman-Savelsberg, Ndonko, and Schmidt-Ehry 2000; Arnold 1993). More recent history is also important. Several scholars describing polio vaccine refusal in northern Nigeria note that memories of Pfizer’s Trovan vaccine trials there colored conversations about polio vaccine (Larson et al. 2011; Yahya 2007; Ghinai et al. 2013).

Groups that are physically or socially marginalized are more likely to refuse vaccines (Das, Das, and Coutinho 2000). Anthropological studies describe vaccine refusals driven by local as well as global politics, including distrust of Western powers perceived to be behind vaccination programs (Nichter 1995; Feldman-Savelsberg, Ndonko, and Schmidt-Ehry 2000). Polio vaccine refusals in Nigeria have been attributed to political tensions within the country, to patron-clientism fueled by polio’s relatively deep pockets, and to distrust of American intervention (Leach and Fairhead 2007; Yahya 2007; Larson et al. 2011; Ghinai et al. 2013).

Health system context. Community members can become suspicious if vaccines are delivered in well-organized, well funded campaigns, but other local health services remain poor quality; several scholars agree that these dynamics fueled refusals in Northern Nigeria (Streefland, Chowdhury, and Ramos-Jimenez 1999b; Leach and Fairhead 2007; Yahya 2007; Renne 2010).

Service delivery of immunizations. Convenience of experience at the vaccination center influences vaccine acceptance (Streefland, Chowdhury, and Ramos-Jimenez 1999a; Streefland, Chowdhury, and Ramos-Jimenez 1999b). Coercive tactics on the part of vaccinators can lead to resistance, while trusted vaccinators and quality communication programs may facilitate vaccine acceptance (Greenough 1995; Streefland 2001; Feldman-Savelsberg, Ndonko, and Schmidt-Ehry 2000; Das, Das, and Coutinho 2000; Nichter 1995; Hardon 2004; Coutinho and Banerjea 2000; Yahya 2007; Larson et al. 2011).

How the GPEI Frames Vaccine Refusals

The GPEI itself is, naturally, interested in the issue of vaccine refusals. Its official framing of those issues tends to deflect attention away from the GPEI's policy decisions and focus attention instead on local populations. Refusals are frequently described as resulting from ignorance. In Nigeria, GPEI planners assert that "local caregivers lack understanding of why multiple OPV [oral polio vaccine] doses are necessary" (UNICEF 2014).

GPEI documents also assert that refusals grow out of political dynamics pitting Islam against the West. For example, in Afghanistan, they say that "in the context of war, polio vaccination is seen to be a western strategy to sterilize Muslims." Other times, Islam is framed as less political and more timeless; a document states that in Pakistan, "some people believe that good health and sickness are the will of Allah" (UNICEF 2014). GPEI leadership has tried to counter such ideas by branding polio eradication as Islamic, for example holding a recent global conference in Abu Dhabi, and publicizing the support of Muslim religious leaders to polio eradication.

Results

Vaccine Refusals in Our Study

To understand patterns of vaccine refusal in our case studies, we searched all documents, fieldnotes, and interview transcripts collected using the protocol outlined above for codes relating to public satisfaction with polio vaccine. These queries, run using the qualitative analysis program NVivo, yielded on average 15-20 pages of interview and fieldnote data from each case study on public satisfaction with polio vaccination. Across our case study districts, public reactions to polio vaccine ran the gamut from enthusiasm to deep distrust.

In each case study, we evaluated whether vaccine refusals were a common phenomenon. We then evaluated the reasons that community members and health workers gave for acceptance or refusal of polio vaccine. We compared this data across our case studies to illuminate trends.

Case Study District	Number of Polio Campaigns in 2011	Year of Last Polio Case in District (as of research in early 2012)	Regional routine immunization coverage (DTP3)	Were there current reports of refusals?
Rubavu (Rwanda)	1	Pre-2001	80%	No
South Omo (Ethiopia)	2	Pre-2001	38%	No
Nizamabad, Andhra Pradesh (India)	2	Pre-2000	61%	No
Rautahat (Nepal)	4	2010	91%	No
Camucuio, Namibe (Angola)	4	1999	27%	Yes
Kumbotso, Kano (Nigeria)	8	2012	9%	Yes
Purba Champaran, Bihar (India)	9 to 10	2010	46%	No
SITE Town, Karachi (Pakistan)	11	2011	48%	Yes

Table 1. Number of polio campaigns (source: WHO), year of last polio case (source: WHO), levels of routine vaccination service provision (source: DHS), and polio vaccine refusals in our case studies.³

In case studies with two or fewer campaigns per year, and one with four campaigns per year, respondents asserted that people were happy with polio campaigns, largely because they no longer had to fear polio. In these districts, refusals were rare. We also saw little evidence of vaccine refusal in Purba Champaran, Bihar, India, despite the fact that there were around 10 polio campaigns per year there.

³ Data on DTP3 coverage regionally are taken from the most recent available DHS survey results (surveys between 2006 and 2011 depending on the country in question). For Angola, the only available information on DTP3 coverage was a 2001 MICS survey.

Kano, Nigeria and Karachi, Pakistan are the two polio-endemic areas in our research—polio was circulating there in 2012 and continues to circulate in 2014. In these cities, polio persists despite 15 years of eradication efforts, polio eradication has a very high political profile, and vaccination campaigns occur on a near-monthly basis. These case studies were the sites of the most vehement vaccine refusals. In Camucuo, Angola, where polio eradication activities were less intense but in some cases were nearly the only health services provided by the government, we observed lower-level refusals (Table 1).

While our analysis is based on all eight case studies, here we present data from four, the ones that best illustrate general trends. We include one case study with limited refusals (Rubavu, Rwanda); two where refusals were common (Kumbutso LGA, Kano, Nigeria and SITE Town, Karachi, Pakistan); and one where refusals have all but disappeared in the last few years (Purba Champaran, Bihar, India). The Supplementary Material contains area maps and photographs of these case studies. Here, we present fieldnote and interview excerpts that are representative of themes in the data.

Rubavu, Rwanda

We drove 45 minutes down a rural, rough dirt road to a health center that opened only two weeks ago. There was a large group of women and children gathered for polio vaccination.

When a child's turn came to be vaccinated, the nurse opened the cooler, pulled out a vial, opened it, and gave the child two drops of polio vaccine. She then crossed a number off of a list corresponding to the child's age. Finally, she marked the child's pinky fingernail with a black marker.

As we headed with the WHO doctor in his white Land Cruiser to our third vaccinating site of the day, the driver pulled over to ask a woman for directions. She had an infant on her back and Dr. S asked if the child had been vaccinated. She said yes, and showed him the marker stripe on her child's finger as proof. She was about three miles from the health center.

Rubavu, Rwanda is a district with a strikingly strong health system, including very strong routine vaccination provision outside of door-to-door campaigns. Over 90% of children in the district receive a third dose of DTP; this high percentage is a result of improvement in health service provision across the country, led by a very committed Ministry of Health.

In this context, frontline workers reported enthusiastic acceptance of polio vaccine in the communities they served. "They appreciate this program, because they are happy to no longer see anyone handicapped by polio," explained a ground-level worker.

Respondents repeatedly compared government provision of health services in Rwanda to that in the neighboring Democratic Republic of the Congo. A ground-level worker explained, "Since people from here often go to DRC, and they see there is no vaccination as in Rwanda, they appreciate what is done here." Polio vaccination was seen as part of the superior basket of health services provided by the government.

Kumbotso LGA, Kano, Nigeria.

We accompanied vaccination workers to a part of the LGA [Local Government Area] widely known for rejection of polio vaccine. The police and Hisbah command officers accompanied vaccinators visiting this area. In the first household we visited, the mothers stated that they had no children under five, the target age for vaccination. That resistance caused a heated debate between the vaccination personnel and the women in the household. When the vaccinators found children in the household, the women claimed that all were more than five years old. At last, the team left for the next household without vaccinating any children.

As the entourage moved on, eligible children we met along the road were vaccinated. Female vaccinators surged into households to either bring out eligible children for vaccination, or to give the vaccinations inside the households. The mothers in most such situations remained speechless and succumbed.

Some of the community members in these areas were not happy with the way the campaign was carried out. The lamentations were that they were intimidated into accepting the vaccine, a situation they considered demeaning.

Polio vaccination in Kumbotso LGA, in the city of Kano, Nigeria occurs in the context of extremely weak provision of government health services generally. Routine vaccination coverage is just 9%. Residents of Kumbotso cannot rely on the government health system to provide basic services. Yet polio vaccine is delivered to their doorstep eight times a year.

Our research was carried out in February 2012, just a few weeks after attacks by Boko Haram killed nearly 200 people in the city. Even in this context, door-to-door polio vaccination continued.

We repeatedly heard from parents, workers, and LGA-level officials that the mismatch between poor-quality health services generally, and frequent campaigns, was the driving force behind refusals. A ground level worker said:

Some people complained that when fuel prices were increased nothing was done to console the poor, but when polio was rejected by the poor, the government and the community

elders were used to persuade people to accept it... If boreholes [providing clean water] and other essential amenities should be provided to these communities the polio vaccine would be more acceptable.

Politics were also frequently cited as a reason for refusals. An LGA-level official argued:

The people know that it [polio vaccination] is good but just because of politics, maybe because they have certain hatred to the chairman of the local government area, so they blindly reject what the government brings.

Ground-level workers also cited the engagement of political and other leaders as reasons for increased acceptance of polio vaccine. One described a witchcraft accusation, defused by political intervention:

Sometimes, sweet, soaps, whistles are distributed to children who are immunized. Recently, an incidence occurred: when I gave a vaccinated child a whistle, his mother threw away the whistle. Then, she just fell down as if something was done to her. As a result, the whole community thought that we gave her a poison. Thank God, the district head intervened.

Witchcraft accusations, rooted in local politics, were a clearly locally specific way of expressing vaccine distrust in Kumbotso.

SITE Town, Karachi, Pakistan.

We first go to an area with excellent coverage and few refusals. We follow a supervisor who knows the way, and we wind through very narrow alleys littered with garbage and animal dung. After many twists and turns, the supervisor starts looking for chalk marks on the walls, left by vaccination teams to show they have visited. Because vaccination teams have been to the area so many times over the last year, there are many layers and colors of chalk, and finally we find today's date. Then, the supervisor knows she has located the vaccination team and tells us which house they are in.

A powerful city official arrives with his entourage of police escorts and men carrying weapons. Our large and ever-growing group now includes a TV camera, more UN/WHO people, a local doctor and vaccinator, and a small, Afghan woman who is part of the local polio team. The WHO person says that there should be a team standing at the street corner to vaccinate children who come by. An NGO representative present is concerned by this. He feels that work on the street undermines social mobilization efforts and could backfire when parents who are refusals find that their children were vaccinated anyway.

In Pakistan as a whole, refusal rates for polio vaccine are much lower than in many wealthy countries. The program's best estimate of refusals nationwide is that they

make up about 0.5% of the population. Rather, there are what planners refer to as “persistent pockets” in “key districts.”

SITE town, a sector in the city of Karachi, is one of these “key districts,” home to refusal populations and to polio. A large number of ethnic Pakhtuns from the province of Khyber Pakhtunkhwa and from the Federally Administrated Tribal Areas live here, including many who moved to the area to escape drone strikes in their home communities.

The care provided at the government health posts in SITE town left a great deal to be desired. At one health post, the doctor, after arriving late, spent only 30 minutes working with all of the patients lined up to see her. Many patients were told to return to the doctor’s private clinic, where she charged for services. Disgruntled patients and district officials alike said that formal, written complaints against this doctor had no effect. The physical buildings of several health posts were literally crumbling.

Yet against this backdrop, 13 door-to-door polio campaigns were carried out in Karachi in 2011, many stretching past a week in length. TV spots touted the importance of vaccinating children against polio, and the President’s teenage daughter was declared polio eradication’s “goodwill ambassador.”

Polio vaccine refusals in some parts of SITE town were widespread and common. Some workers described being chased away from houses with sticks.

One mother said:

I cannot trust the polio workers and those drops that are given in the polio campaign... Polio campaigns should be stopped now. Routine immunization is a good thing. Medicine should be free, and there should be a doctor sitting in the clinic.

Workers told us many of the things they heard from people refusing polio vaccine:

Jews and Americans are our enemies; why would we take polio drops from them?

Drops cause infertility.

If we take drops we are not able to say the Kalimah.

To administer a cure before getting the disease is shirk [blasphemy].

Not even a month has gone by since the last campaign, and now it has started again. Why?

Distrust about vaccines—often expressed in religious or political terms—was relatively common.

Purba Champaran, Bihar, India.

We arrive at the school and wait here for about an hour – the campaign cannot be launched until the DM [District Magistrate] arrives. It seems like the whole village is there waiting. A chorus of loud, animated voices fills the air. Some of the medical officials pass out paper fox facemasks to all the young children.

The District Magistrate arrives with great fanfare amongst a train of cars. The first car speeds up, announcing the DM's arrival with constant honking until it parks. A contingent of security guards get out. A few of the women who have been waiting inside the school go outside, holding their babies to be vaccinated. The DM and other officials give the infants polio drops to inaugurate the campaign. As this happens, the crowd surges forward to see. All the medical officials previously seated in chairs on the porch are standing up, some taking pictures. Swarms of men have crossed the roads and are standing practically touching the chairs, jostling to watch.

After several speeches, the inauguration concludes, and we drive through a nearby village and are introduced to the polio team there. The teams are using two books: the Community Mobilization Coordinator fieldbook and the due list. Each house is accounted for, and every child in each household is listed with their immunization record, for polio as well as Routine Immunization. It is extremely detailed.

Purba Champaran, a densely populated district in Bihar, was one of the last districts in India with polio cases. Because of this, there are very frequent polio campaigns, 9-10 per year at the time of our research.

Purba Champaran had something of a reputation for corruption. Our observations of the health system did little to dispel this reputation. In one health post, one member of our research team interviewed the Medical Officer in Charge, who answered questions with vaunted references to Gandhi and the Buddha, while patients outside told us that he charged Rs. 80 (about \$1.25) for consultations that were supposed to be free. At another health post, the Medical Officer in Charge (whose office door declared he was on duty between the hours of 12-1 and 4-5) declined an interview; he was too busy counting the piles of thousand-rupee notes on his desk, earned, patients said, by extracting money from the families of women who needed emergency C-sections.

Nonetheless, patient care in Purba Champaran is in a period of marked improvement. Some facilities, particularly for deliveries, were severely substandard, consisting only of a metal table in a blood-splattered stall with only three walls. But all of the health posts we visited in Purba Champaran were staffed and functional, and many were very busy. In particular, routine immunization services have improved dramatically under Bihar's Muskaan program, implemented in 2007. The manager of one particularly well-run health post explained that while sometimes patient care was not perfect, "health care in Bihar has improved a lot over the past

few years. I hope that in another few years the care we provide will be something to be truly proud of.”

These improvements led to increased trust in government health services. “Trust has increased very much,” a frontline worker said.

One manifestation of this trust was acceptance of vaccination. Our respondents were nearly unanimous in asserting that there has been a sea change in public acceptance of all vaccines, including polio vaccines, over the last 15 years. People used to fear vaccination, respondents told us, but now they largely accept it.

Particularly in Muslim populations, which are a sizable minority in Purba Champaran, distrust of polio vaccine has historically been an issue.⁴ However, our respondents overwhelmingly asserted that such problems were a thing of the past.

As a ground-level worker explained:

Earlier, when we used to go door-to-door for polio campaigns, people would say they didn't want to give their children the vaccine. My children will get a fever, people would say, or they'd say the vaccine would sterilize their children... They used to hide their children. But now, the public is aware. People come themselves to get vaccination.

In one Muslim community we visited, mothers affirmed that more health services are being provided in this community than previously. People's attitudes toward the health system, they said, have changed accordingly.

Two additional programs likely contributed to this sea change in vaccine acceptance. First, the Global Polio Eradication Initiative, as part of its “107 Block Plan,” hired full-time Community Mobilization Coordinators responsible for spreading messages of vaccine acceptance. More information on the 107 Block Plan is available in the Supplementary Material; this program went beyond vaccine communications to address the underlying causes of polio transmission.

A second program relevant to increased acceptance of vaccines is the Anganwadi program. Anganwadi workers are community women who run a preschool education and nutrition program out of their homes. Every day, they provide free childcare and food to the preschoolers in their neighborhood, and provide food supplements to families. The program is, not surprisingly, very popular.

These same Anganwadi workers also go door-to-door providing polio vaccine during scheduled campaigns. So vaccine is being provided to children by the same trusted women who teach and feed them.

⁴ Similar dynamics in the early 2000s were described by anthropologists working in Uttar Pradesh, also in North India (Jeffery and Jeffery 2011).

Explaining Patterns of Vaccine Refusal

Looking at the case studies with current refusals, we find ample evidence to support the complex and interrelated causes of vaccine refusal that other anthropologists have described. On first glance, the available evidence seems to underline the diversity of experiences in our case studies.

Take the category of politics. In Kumbotso, Nigeria, discourses about vaccine acceptance were heavy on references to Local Government Area (LGA) politics. Some workers asserted that people refused vaccination simply to spite LGA leaders. In contrast, a situation where workers were accused of poison or witchcraft was defused by the intervention of an LGA political leader.

In SITE Town, Pakistan, a community with large numbers of drone refugees, some people argued that accepting “American” vaccination would erode one’s Muslim credentials by amounting to shirk [blasphemy] and preventing one from performing such fundamental rituals as uttering the Kalimah.

In Kumbotso and SITE Town, discourses about vaccine refusals were tied securely into the histories, politics, and social structures of these two very different and very chaotic cities. Local context appears, at first blush, to be the best way to make sense of vaccine refusals.

However, such an analysis misses the global factors behind vaccine refusals. Systematic comparative analysis has the power to illuminate how phenomena are patterned across contexts—and influenced by global factors in systematic ways. Distrust and refusals are driven in large part by the disconnect between weak health services and intense polio campaigns.

In all case studies with fewer than four campaigns a year, no widespread refusals were evident, even in cases where the quality of care at government health facilities left a great deal to be desired (Table 1). But in Kumbotso and SITE Town, whose crumbling health systems’ nearly only functional activity was to implement polio vaccination campaigns on a near-monthly basis, refusals were common and vehement. One major contributing factor in both places is the relative lack of availability of international aid funds for basic health services compared to disease-specific interventions like polio eradication (Marchal, Cavalli, and Kegels 2009).

Finally, there is the telling exception of Purba Champaran, Bihar, India, where refusals are rare despite the fact that polio campaigns occur nearly 10 times a year. Here, in the context of imperfect but markedly improving health services, programs focused on improving a variety of services beyond polio, and the use of trusted providers of polio vaccine, refusals have all but disappeared.

The patterns across our eight case studies illuminate that a mismatch between frequent, well-funded polio campaigns, sometimes implemented with a heavy hand, and a health system that provides little of what people need, stirs up distrust. In such contexts, many parents begin to fear that a vaccination campaign may not be what it seems.

This is not just a post-hoc etic analysis; emic explanations along these lines were common in every one of our case studies with frequent refusals. A worker in Kumbotso explained, “people say there are misplaced priorities.” And in SITE Town, mothers expressed their opinion that polio campaigns should be ended alongside exhortations to improve the health system generally.

The contrast between the emphasis on polio vaccination and the lack of attention to other health problems on the part of their governments, people in our case studies stated in no uncertain terms, made them nervous. These fears were expressed in local idioms, different across our case studies.

Systematic comparative ethnography is not the only method that can uncover such phenomena—other studies of polio eradication have described similar dynamics (Renne 2010; Muraskin 2012; Jeffery and Jeffery 2011). Furthermore, we do not claim that contextual interpretations and local understandings are less important than translocal factors. But vaccine refusals are not only contextually explained phenomena, but also reflect global decisions to fund single-disease initiatives more heavily and systematically than general health programs.

Our data complicate the narrative of Islamic resistance to Western power as driving refusals. Certainly organized resistance to polio eradication by groups like Boko Haram and the Taliban influence people’s ideas about vaccination.⁵ Muslims in Karachi and Kano who distrust polio vaccine draw on discourses about Islam as an alternative paradigm to Western domination in framing vaccine refusals.

But even Islamic religious leaders and political groups known for their opposition to Western influence endorsed polio vaccination when it was politically advantageous. The Hisbah command leaders in Kano, Nigeria are a paramilitary religious force whose aim is to enforce Islamic law. They also assist with polio vaccination. The Taliban, too, frequently endorse polio vaccination. Polio eradication is an attractive political target for anti-government actors primarily because it is so visible (Closser and Jooma 2013; Abimbola, Malik, and Mansoor 2013).

⁵ The CIA’s use of a fake vaccination campaign in Abbottabad, Pakistan in 2011 likely hurt the credibility of such campaigns (though our respondents did not refer to it explicitly).

Returning to the debate about “spillover effects” of vertical programs, relentless focus on a single disease can be counterproductive not only for the broader health system (Closser et al. 2014), but for the vertical program itself. This is not to say that vertical programs are inherently problematic: in case studies where polio eradication activities were less intense, people appreciated what the program provided. But a mismatch between the emphasis on polio vaccination and other services drives distrust.

Anthropologists have been very successful in uncovering the context specific patterns shaping reactions to health programs. Our analysis here illustrates that since such programs are transnationally created, a clear understanding of their global aspects should be part of the anthropological project, supplementing and enhancing quality work based securely in specific local contexts. This is not a call to leave behind the traditional mode of ethnographic exploration, but rather an invitation to use systematic comparative ethnography as an additional, powerful tool in a highly interconnected world.

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Acknowledgements: This study was funded by the Bill and Melinda Gates Foundation. We are grateful for the support of the following individuals to the study: Molly Abbruzzese, Ni'ma Abid, Amina Mohammad Adamu, Samesh Adhikari, Mercy Ahun, Aminu Ali, Hailom Banteyerga Amaha, Aline Bahati, Kate Bass, David Bishai, Altaf Bosan, Logan Brenzel, Hannah Burnett, Marcolino Cambumba, Anna Clements, Bala Danyaro, V. Renuka Devi, Elias Durry, Donatha Dushimimana, Jessie Ebersole, Lisa Emmer, Michal Fishman, Marta Gacic-Dobo, Maurice Gatera, Lenette Golding, Ranjani Gopinath, Nicole Grohoski, John Grove, Suraj Gurau, Melkam Hailom, Robel Hailom, Karin Hanta, Obaid ul Islam, Aline Ikirezi, Radha Jayannagari, Sarwat Jehan, Rashid Jooma, Hannah Judge, Innocent Kabayiza, Farhat Khan, R. Matthew Landis, Alyssa Lowe, Matthew A. Luck, Meghan Lynch, Anil Menon, Zubair Mufti, Clotilde Muhimpundu, Maikano Madaki, Assumpta Mukabutera, Agnes Mukamana, Marie Jeanne Mukarwego, Joseph Murwany, Angèle Musabyimana, Eularie Mutamuliza, Aminu Ahmed Musa, Wadood Myireh, Grace Natson, Vanessa Neergheen, Fidele Ngabo, Joseph Ngamiye, Peter Nsubuga, Elizabeth Nuttall, Thomas M. Parris, Aftab Pasha, Muhammad Pate, Quan Pham, W. Frank Pont, Jr, Allison Prather, K. Srinivas Rao, Marty Roper, Anat Rosenthal, Joel Rugomboka, William Schluter, Benjamin Schwartz, Isabel Shaw, Simarjit Singh, Ali Sohail, Jessica Stevens, Shiva Prasad Subedi, Pauley Tedoff, Naveen Thacker, Marie Claire Umuhoza, Béata Umutesi, Shyam Raj Upreti, Théophila Uwanyiligira, Emma Varley, Linda Venczel, Lucio Verani, Dora Ward, Chris Wolff, Naziru Mohammed Zakari, Rahel Zewengel

The Global Context of Vaccine Refusals: Insights from a Systematic Comparative Ethnography of the Global Polio Eradication Initiative

Supplementary Material

Table of Contents

Links to Other Material.....	1
Maps and Photos of Case Study Districts	2
Rubavu, Rwanda	2
Kumbotso, Kano, Nigeria.....	3
SITE Town, Karachi, Pakistan.....	4
Purba Champaran, Bihar, India	5
Codebook.....	6

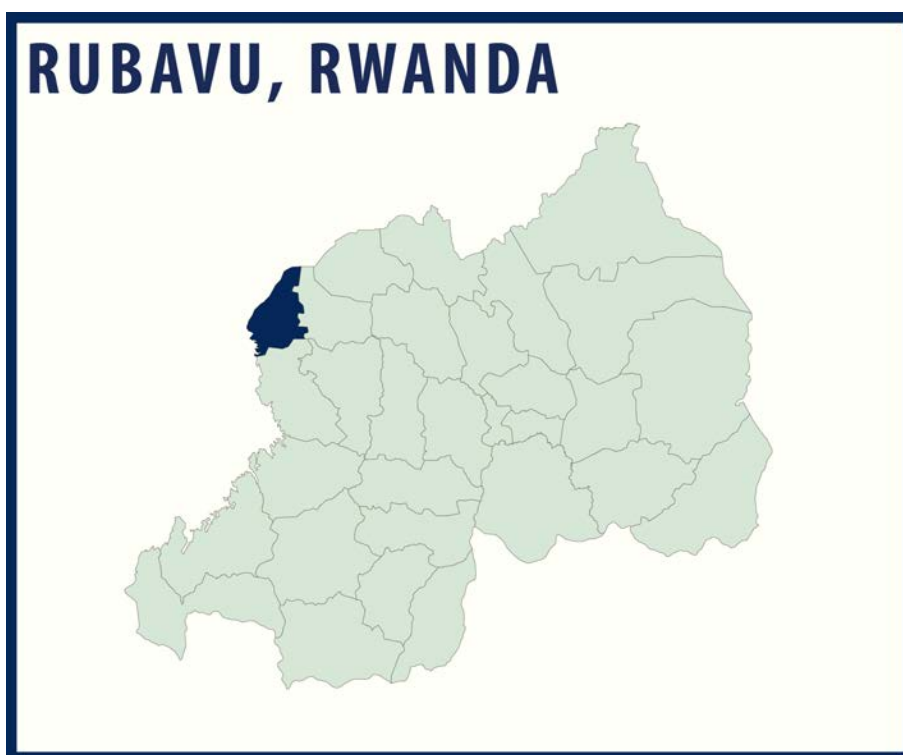
Links to Other Material

The full 66-page study guide is available here:

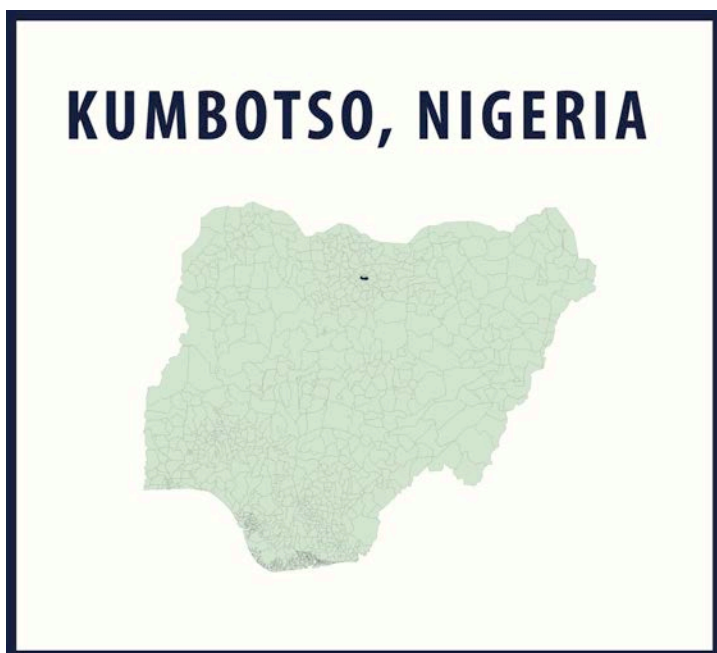
http://sites.middlebury.edu/polio_eradication_impacts_study/qualitative-research-guide/

For more information on India's "107 Block Plan:"

http://sites.middlebury.edu/polio_eradication_impacts_study/files/2014/04/Social-Mobilization-In-Focus-India-reduced-size.pdf



A nurse vaccinates a child in Rubavu.



Vaccinating children during a polio campaign inauguration in Kumbotso.

SITE TOWN, PAKISTAN



Vaccination workers go door-to-door in SITE Town.



A worker marks a house where she has vaccinated children in Purba Champaran.

The codes used to code documents, fieldnotes, and interview transcripts across the eight case studies are listed here. The analysis in this paper focused primarily on the codes highlighted in yellow, relating to relationships between the health system and the larger public.

Nodes

