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Barriers to Polio Eradication in Nigeria

A Situation Assessment

Prepared for The Bill & Melinda Gates Foundation

April 2014

Barriers to Polio Eradication in Nigeria

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Barriers to Polio Eradication in Nigeria

Executive Summary

Existing Barriers and emerging Challenges to Polio Eradication

A) Healthcare Infrastructure

Nigeria's governance structures are highly decentralized making health service delivery a multi layered process with complicated and unclear division of responsibilities. Funding flows are unclear and unpredictable, while accountability is almost non-existent. In northern states people are highly dissatisfied with health care facilities and access to them.

B) Negative public Opinion

Refusal of polio vaccination based on a negative perception of "Western" and "American" aid, particularly vaccinations from Western pharmaceutical companies, as well as the government siphoning funds from foreign organizations. Few people see polio as the biggest health threat and therefore do not understand the overemphasis on polio compared to malaria, typhoid and diarrhea.

C) Unstable political and Security Situation

In northern states, such as Borno and Yobe, the security situation is the primary concern of families and poses a key challenge to vaccination teams. Attacks by Boko Haram on polio workers and vaccination facilities as well as lack of information and feedback about the development of the situation add to the difficulty for polio teams to plan vaccinations. The situation has deteriorated in the first quarter of 2014. Elections in 2015 are expected to slow down polio eradication efforts.

D) Operational Issues

Lack of monitoring and coverage of vaccination campaigns have resulted in the same children and households being consistently missed in immunization rounds. In addition, lack of financial oversight and overabundance of cash has distorted the public health market. Some organizations might purposely fail to monitor their work so eradication campaigns and funding will continue.

Recommendations on overcoming Barriers of Polio Eradication

Based on the initial assessment of the situation, the following mitigation strategies are suggested in order to address the issues associated with polio eradication:

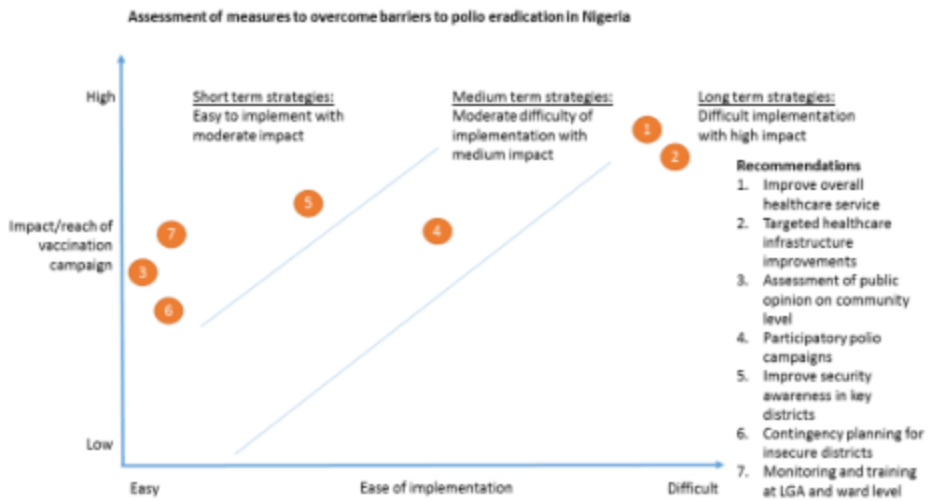
A) Improvement of overall **healthcare infrastructure** and services
   1) Improvement of overall healthcare services: Polio vaccination campaigns should be part of a broader push for better governance and better delivery of health services. This would strengthen the credibility of polio and health workers and potentially reduce "polio fatigue" and vaccine rejections.
   2) Targeted healthcare infrastructure improvements: Development and maintenance work of facilities could be undertaken as well as improvement of medical equipment and supply of medication in affected regions. These measures would improve the health care infrastructure in particularly distrustful communities.

B) Changing **public opinion** and maintaining stakeholder involvement

3) Assessment of public opinion on community level: Determining the public opinion on community level will be necessary in order to review and reassess current communication strategies and campaigns for different regions.
4) Participatory polio campaigns: Immunization programs should involve state and local governments, community leaders and traditional rulers such as emirs, political and religious leaders. The merits of polio vaccines should continue to be broadcast through formal and informal networks, such as community radio television, pamphlets, religious ceremonies and cultural events.

C) Raising awareness of the **security context** & performing scenario analysis
5) Improve security awareness in key districts: Setting up a network to gather information about the security situation on LGA and ward level would help mitigate the risk of attacks on future vaccination campaigns.
6) Contingency planning for insecure districts: GPEI should develop contingency plans for each LGA on how to operate in a crisis environment. In addition, public health professionals need to be educated about political and security issues in the areas in which they work.

D) Mitigating **operational inefficiencies**
7) Monitoring and training for vaccination staff: Staff should be trained in order to perform more robust monitoring at the LGA and ward level to facilitate efficient use of funds and resources.



In the graph above, the various strategies laid out have been clustered according to their likely impact on the polio eradication campaign, as well as on their ease of implementation. Ease of implementation was assessed along three criteria: cost, time and risk. In particular, the issue of risk is pertinent for those interventions seeking to have impact in Boko Haram controlled regions.

Barriers to Polio Eradication in Nigeria

Introduction

At the start of the campaign in 1988, there were an estimated 350,000 cases of polio worldwide, with 125 countries classified as polio-endemic. By the start of 2012, only 222 cases were reported worldwide and the number of polio-endemic countries had been reduced to three: Afghanistan, Nigeria and Pakistan. In total, polio has disappeared by 99.9%, but the remaining .1% of eradication has proven to be the most difficult, the most expensive — and the most important.[1]

Nigeria rests on the front lines of the global fight to eradicate poliovirus. In 2013, 53 new cases of polio were detected[2] while the first weeks of 2014 saw dozens of clinics close and hundreds of doctors flee amid continuing attacks by Islamist sect Boko Harm in the country's north.[3] Nigeria remains the only polio-endemic country in Africa, and one of the few countries in the world where children are still at risk of paralysis or death from polio.[4]

These grim realities come despite a coordinated push by the Nigerian Federal Government (FG), state and local governments, and the international community to eradicate polio in northern Nigeria. As one of the last polio-endemic countries in the world, Nigeria represents not only one of the last pieces of the global polio eradication puzzle, but a puzzle in its own right.

Regional insecurity recently lead to a spillover of polio to Cameroon. In March 2014 three new cases of polio have been reported with a total of 7 since 2013, making it the first outbreak since 2009. The World Health Organization stated that the virus is at high risk of crossing borders. The same strain as in Cameroon has just been confirmed in Equatorial Guinea, making it the first case since 1999.[5]

The persistence of polio in Nigeria has global implications. In 2003, for example, several states in northern Nigeria banned federally sponsored polio immunization campaigns amid the "discovery" that the vaccine was contaminated with drugs intended to sterilize young Muslim girls. This decision led to a global outbreak accounting for the spread of polio into 20 countries across Africa, the Middle East, and Asia, causing 80 percent of the worlds' cases of paralytic poliomyelitis. In addition to effectively ending any hopes of eradicating polio by the revised goal of 2010, the vaccine boycott eventually led to an estimated $500 million in costs to control the outbreak.[6]

Within its own borders, polio eradication in Nigeria represents much more than a public health issue. It sits at the center of a complex web of incentives which are shaped by cultural concerns, structural constraints, and political calculations amid an environment of insecurity.

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[1] Polio Global Eradication Initiative, http://www.polioeradication.org/Dataandmonitoring/Poliothisweek.aspx
[2] See: Polio Global Eradication Initiative, http://www.polioeradication.org/Dataandmonitoring/Poliothisweek.aspx It is worth noting that the 53 cases in 2013 are down from 122 in 2012, a 57% drop.
[3] "Violence grinds healthcare to a halt in Nigeria's Borno State," IRIN, 5 February 2014 http://www.irinnews.org/report/99595/violence-grinds-healthcare-to-a-halt-in-nigeria-s-borno-state
[4] "Polio endemic" is the term used to describe a region or country with naturally circulating poliovirus and where polio transmission has never been interrupted. Nigeria is the only polio endemic country in Africa.
[5] "Regional insecurity fuels polio in Cameroon" IRIN, 26 March 2014 http://www.irinnews.org/report.aspx?ReportID=99841
[6] WHO Global Alert and Response, "Poliomyelitis in Nigeria and West Africa," January 6, 2009, http://www.who.int/csr/don/2009_01_06/en/index.html.

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In its own self-assessments, the GPEI Independent Monitoring Board has expressed concern as recently as 2011 that polio will not be "eradicated on the current trajectory" asserting that "important changes in style, commitment and accountability are essential."[7]

These warnings are still applicable today. Divisive national elections that are all but guaranteed to exacerbate existing political, ethnic, and religious tensions at the national and local levels are scheduled for February 2015. Meanwhile, the Federal Government finds itself bogged down in an intractable war against an Islamist insurgency that is escalating by the day, leaving the lives of hundreds of thousand, if not millions of northern Nigerians hanging in the balance.

While elections and ongoing security concerns in the north are sure to divert critical attention and resources away from vaccination efforts, they also increase the risk of further politicizing, or even militarizing the already controversial issue of polio eradication.

The stalemate in the battle against polio in Nigeria also comes at a time when public health experts, as researchers Jennifer G. Cooke and Farha Tahir have noted, "are beginning to express concern about the opportunity costs of continuing a campaign with a price tag of $1 billion annually to eradicate a disease that, however, devastating, is not among the top 20 killers in the developing world."[8]

Put another way, the poliovirus and efforts to eradicate it do not exist in a vacuum. The considerable progress that has been made over the last decade in eradicating polio in Nigeria remains as reversible as ever, due in large part to dynamics such as "polio fatigue," continued gaps and failures in governance, and an increasingly precarious security situation in the country's north.

Polio eradication is a political issue, and comprehending the socio-political context in which these vaccination campaigns must operate is critical not only to identifying barriers to polio eradication, but to understanding why consolidating gains to date has proved so challenging.

This report investigates the nature of these barriers to polio eradication in northern Nigeria by placing them within their proper socio-political context. It identifies several types of barriers and emerging challenges to polio eradication, and aims to offer a nuanced analysis of the way in which various dynamics work against consolidating the gains of polio eradication in a symbiotic, cyclical and often self-sustaining manner.

Polio eradication efforts have made considerable strides over the last decade in northern Nigeria, and the global public health community has shown an admirable commitment to self-evaluation. The challenge of polio, however, is that unless transmission is interrupted entirely, dramatic reversals remain a strong possibility.[9]

[7] Independent Monitoring Board of the Global Polio Eradication Initiative, "Report, October 2011," http://www.polioeradication.org/Portals/0/Document/Aboutus/Governance/IMB/4IMBMeeting/IMBReport October2011.pdf.
[8] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.
[9] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012. Also see: Charles Kenny, "The Eradication Calculation," Foreign Policy, 17 January 2011, [redacted]

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While incorporating the lessons of past shortcomings into future activities is a critical component of effective programming, GPEI efforts could be further enhanced by improving its ability to think "strategically" about polio eradication within Nigeria's shifting socio-political and security contexts. A better understanding of "human terrain" might allow GPEI to anticipate problems before they occur and to better mitigate the negative impact of events that are outside of its control.

Figure 1: Map of Worldwide Polio Cases (19 August 203-18 February 2014)10

Methodology

In order to gain a more strategic understanding of the barriers to polio vaccination within northern Nigeria's current political and security environment, the authors of this paper conducted a rapid-assessment consisting of a comprehensive review of pertinent works of scholarship, international and national reports, press articles, and six weeks of field work across 10 states in northern Nigeria. These states include Borno, Yobe, Bauchi, Jigawa, Kano, Katsina, Kaduna, Zamfara, Sokoto and Kebbi.

The field work for this report was carried out by local journalists and interlocutors who could safely and responsibly navigate the risks involved in arranging and conducting interviews in northern Nigeria given its current security environment. Due to the sensitive nature of the subject at hand, interviewers relied on long, semi-structured interviews in order to approach the subject of polio discretely. This interview format also provided ample space for wider discussions about development, health services, governance and security, all of which are crucial to better understanding the socio-political context in which polio eradication efforts succeed and fail.

[10] Global Polio Eradication Campaign, with modifications by the author:
http://www.polioeradication.org/Dataandmonitoring/Poliothisweek/Polioinfecteddistricts.aspx

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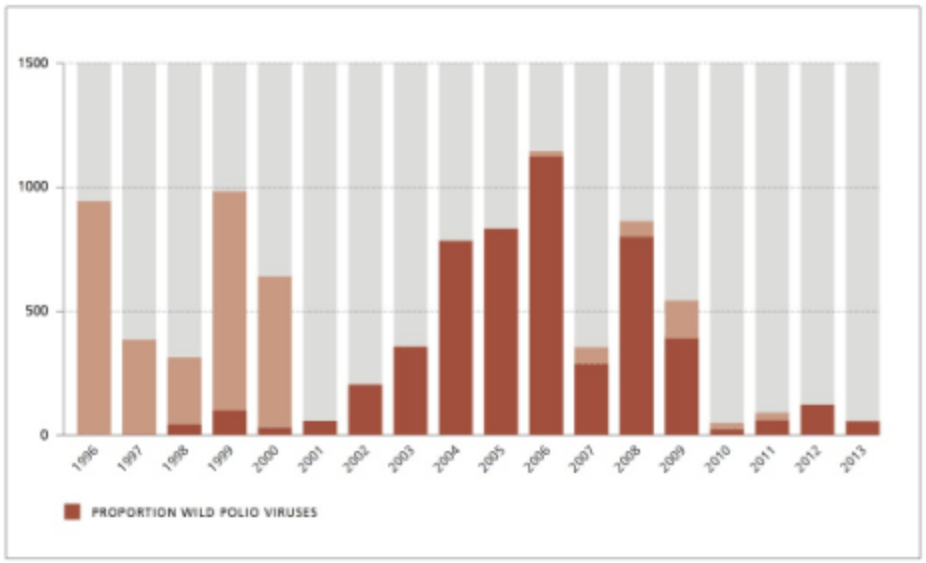

Figure 2: Number of Polio Cases in Nigeria, 1996-2013[11]

In an effort to consult a broad and diverse set of perspectives on these issues, over sixty interviews were carried out with men and women from a range of backgrounds. The authors sought opinions from local government officials, doctors, healthcare providers, religious leaders, traditional leaders, school teachers, business people, community organizers and much more. Though the authors are confident that this methodology is the most appropriate for the questions this paper seeks to engage, it is worth emphasizing that this is a qualitative approach and the underlying research that supports the paper's conclusions should be treated as such.

Northern Nigeria in Context

Nigeria is a country of paradox, representing the best and worst of how African states are perceived by the broader international community.[12] It is an economic giant, an intellectual hub, and a regional leader. At close to 175 million people, it is by far the most populous country in Africa. Its large area holds productive agricultural land and immense deposits of oil and natural gas.[13] With an urbanization rate of close to 50% and a population whose median age is 17.9 years, Nigeria seems poised for economic

[11] Figure 2 sources, WHO and GPEI
[12] Clarence J Bouchat, "The Causes of Instability in Nigeria and Implications for the United States," Strategic Studies Institute, 19 August 2013.
[13] Central Intelligence Agency (CIA), The 2012 World Factbook, 2012, Nigeria. https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html

prosperity.[14] Already the largest oil producer in Africa, Nigeria's economy has been growing at a rate of 6 to 7 percent per year and is well placed to soon overtake South Africa as Africa's largest economy.[15]

Nigeria also views itself as the natural leader of the African continent, in part due to these demographic and economic realities. It possess one of Africa's strongest and most capable militaries which regularly plays an active role in peace operations abroad. At the international level, Nigeria has been recognized for its leadership in major organizations such as the Organization of the Islamic Conference (OIC), the Organization of Petroleum Exporting Countries (OPEC), the African Union (AU) and the Economic Community for West African States.[16]

All of these accomplishments come despite endemic corruption, grinding poverty, and sectarian violence that has plagued Nigeria for decades.[17] In fact, the roots of Nigeria's dysfunction, and the fault lines along which Nigeria may be torn apart can be traced to the very process of its formation.[18] As McLoughlin and Bouchat explain:

> Like most post-colonial African states, Nigeria is both a mosaic of tribes, related or allied ethnic or ideological groups, and nations now linked economically and politically under a common government in a colonially imposed territorial unit. The British colonial government created a unified Nigeria in 1914 to demarcate its area of control from those of its European competitors and because its northern protectorate was too poorly resourced to stand on its own. It was therefore created as a state by externally imposted fiat, not for any internal, organic reason. Before the British arrived, there was no shared national consciousness, culture, or language in Nigeria, nor was there any sentiment to coalesce its peoples into a coherent nation under colonial rule.[19]

History

53 years into independence, it is no small wonder that Nigeria remains a single state. While the Biafran war of the late 1960s is the most high-profile manifestation of regionalist and sectarian impulses in post-colonial Nigeria, it is by no means the only one. Even today, the Federal Government continues to face challenges to its authority from a number of armed groups based on regional, ethnic, ideological and religious identity. These movements include the Movement for the Actualization of the Sovereign State of Biafra (MASSOB) in the south-east, the Movement for the Survival of the Ogoni People (MOSOP) and the Movement for the Emancipation of the Niger Delta (MEND) in the south, and an Islamist insurgency in the north all of which are fighting in different ways to wrest control of territory away from the central government in Abuja.[20]

[14] Central Intelligence Agency (CIA), The 2012 World Factbook, 2012, Nigeria. https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html
[15] Todd J. Moss, "BRICN? When Will Nigeria Pass South Africa?" Center for Global Development: Views from the Center, 8 August 2013. http://www.cgdev.org/blog/bricn-when-will-nigeria-pass-south-africa
[16] Clarence J Bouchat, "The Causes of Instability in Nigeria and Implications for the United States," Strategic Studies Institute, 19 August 2013.
[17] See: Clarence J Bouchat, "The Causes of Instability in Nigeria and Implications for the United States," Strategic Studies Institute, 19 August 2013.
[18] Gerald McLoughlin and Clarence J. Bouchat, "Nigerian Unity In The Balance," Strategic Studies Institute, June 2013.
[19] Gerald McLoughlin and Clarence J. Bouchat, "Nigerian Unity In The Balance," Strategic Studies Institute, June 2013.
[20] Jonathan [redacted]. Hill, "Sufism In Northern Nigeria: Force For Counter-Radicalization?" Strategic Studies Institute, May 2010.

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Many of the difficulties confronting Nigeria are at least partly of its own making.[21] Governing such a divided state was never going to be an easy undertaking. The roster of military juntas that ran the country into the ground only gave way to democracy in 1999, but Nigeria's current government has done little to inspire confidence.[22] Decades of corruption, abuse, and inept government have alienated large portions of the Nigerian population and left a chasm between the government and the governed.[23]

Government & Administration

Nigeria's government is designed as a Federal Republic. Executive power resides with the President who is the head of state and head of government. Legislative power is divided among two chambers, a democratically elected House of Representatives and the Senate, which together form the law-making body known as the National Assembly. The Supreme Court of Nigeria acts as the country's highest judiciary.[24]

Administratively, Nigeria is divided into 36 states that elect a governor and 1 territory (the capital, Abuja). Each state is further divided into 774 Local Government Areas known as LGAs. In turn, each LGA is divided into wards.

Religion

Islam was first introduced to northern Nigeria in the 11th century, becoming well established in the major urban centers across the north and gradually spreading south into what today is referred to as the "middle belt" of Nigeria by the 16th century.[25] Today, about half of Nigeria's population is Muslim, the majority of whom live in northern Nigeria. 12 states in northern Nigeria have had sharia law codified within their legal code since 2000. Though the vast majority are Sunni Muslim, there is a significant Shia minority, and a wide array of brotherhoods and sects who preach various violent and non-violent forms of fundamentalist, conservative and moderate Islam.

Northern Nigeria has a long tradition as a center of Islamist thought, including fundamentalist strands of Islam- One of the first and most famous instances of armed Islamist uprisings against the state came in the early 19th century when religious scholar Usman Dan Fodio led a group of Muslims from the Fulani tribe to revolt against the dominant Hausa sultanates and the sultanate of Borno.[26]

At the heart of Dan Fodio's political and social revolution stood the belief that the rulers of northern Nigeria were corrupt and were not true adherents to sharia because they allowed the practice of Islam to be mixed with traditional beliefs. After leading his followers into exile, Dan Fodio called for jihad and returned to launch a successful attack that would go on to establish the Sokoto Caliphate, stretching across northern Nigeria and its environs. The Caliphate represented an Islamic banner of resistance to colonial conquest, and a rejection of secular government.[27] To this day, the Sultan of Sokoto remains one of the most important and influential religious leaders in northern Nigeria.

[21] Jonathan [redacted]. Hill, "Sufism In Northern Nigeria: Force For Counter-Radicalization?" Strategic Studies Institute, May 2010.
[22] Carlo Davis, "Boko Haram: Africa's homegrown Terror Network," World Policy Journal 12 June 2012.
[23] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.
[24] "Nigeria," CIA World Factbook, 28 January 2014. https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html
[25] Emilie Oftedal, "Boko Haram: An Overview," Norwegian Defense Research Establishment (FFI) 31 May 2013.
[26] Emilie Oftedal, "Boko Haram: An Overview," Norwegian Defense Research Establishment (FFI) 31 May 2013.
[27] Abimbola Adesoji, "The Boko Haram Uprising and Islamic Revivalism in Nigeria," Africa Spectrum 45, no. 2 (2010)

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Colonialism

In the early 1900s, the British Empire extended its colonial control northward from the Nigerian coast, eventually gaining control of the Sokoto Caliphate. Initially, the British decided to maintain northern and southern Nigeria as two separate protectorates due to their cultural differences. Economic calculations persuaded the British to merge the two in 1914.

But even after unifying northern and southern Nigeria, Britain pursued a colonial system of indirect rule in the north, choosing to govern the area through hand-picked indigenous rulers. This policy institutionalized existing north-south divisions, the effects of which are prevalent to this day.

Present Situation

Nigeria's economic decline since independence has hit the north particularly hard. Per capita public expenditure on health in the north was less than half that in the country's south as recently as 2003.[28] Development indicators remain lower than in the south where there is far more public and private investment, infrastructure and health services.

Nigeria's transition to democracy in 1999 saw the election of Olusegun Obasanjo, making him the first Christian and southerner to lead the federal government since his own tenure as a military ruler from 1976 to 1979. This shift in political power from northern political elites to southern political elites, combined with widening economic disparities between north and south, fueled a sense of political marginalization throughout much of northern Nigeria.[29]

With little faith left in government and politicians, hundreds of thousands, perhaps millions, of Nigerians have found themselves drawn to individuals and groups who advocate a radical alternative to the status quo, often expressed in religious or moral terms. Within Christian communities, which are predominantly but not exclusively based in southern Nigeria and constitute roughly 40% of the population, disillusionment with government has tracked with the rise of evangelical Christian movements advocating faith as an alternative means to health and economic prosperity. Among Nigerian Muslims, who make up approximately 50% of the population, there has been a surge in support for sharia law as an alternative to a corrupt and ineffectual secular judiciary.[30]

Researcher Peter Chalk identifies three main streams of Islamic thought in contemporary Nigeria: conservatism, modernism and fundamentalism. Fundamentalism in the Nigerian context, according to Chalk, focuses on "anti-system movements that articulate vehement opposition to the existing political (secular) status quo, the federal government, established (and perceived ineffectual) religious elites, modern-oriented Muslim identity, and foreign -- mainly Western -- influences."[31] In other words, the fundamentalist strand of Islamist thinking in the north of the country says that the continued failures of the Nigerian government are evidence of inherent flaws with secular government. In recent years, a

[28] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.
[29] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.
[30] Jonathan [redacted] Hill, "Sufism In Northern Nigeria: Force For Counter-Radicalization?" Strategic Studies Institute, May 2010.
[31] Peter Chalk, "Islam in West Africa: The Case of Nigeria," in The Muslim World after 9/11, ed. Angel M. Rabasa et al. (Santa Monica, CA: RAND, 2004).

group called Boko Haram has emerged as the most salient and destructive manifestation of this philosophy.

Boko Haram

Boko Haram is an Islamist sect in northern Nigeria. Initially established as a religious movement in the late 1990s or early 2000s that sought to purify northern Nigeria from the corrupting influences of Western culture, Boko Haram has since transformed into an armed insurgency determined to transform Nigeria into an Islamic state.

Though the group had been carrying out violent attacks for the better part of a decade, Boko Haram burst onto the international scene in 2010 and 2011 when it carried out a string of deadly attacks against the Nigerian government and detonated a car bomb after crashing into a United Nations building in Abuja, killing 23 people in the process.

Nigerian President Goodluck Jonathan has sought to crush Boko Haram through the enlistment of civilian vigilante groups and the deployment of some 8,000 soldiers supported by fighter jets and helicopter gunships to northern Nigeria. Due to a virtual media blackout northeast Nigeria, where a state of emergency has been in place since May 2013, very little information can be independently verified. Consequently, it is difficult to assess the effectiveness of the Nigerians government's heavy-handed tactics, and the effects of fighting between the government and Boko Haram on the civilian population.

As a result of the upsurge in violence, Nigerian citizens are openly wondering if their country is on the brink of a civil war. Amid checkpoints and constant security warnings, an air of apprehension pervades daily life throughout much of northern Nigeria, with social and economic activities in some northern states grinding to a halt and and bringing previously peaceful communities to the verge of fracture.[32]

The relative strength of Boko Haram is unclear. While Boko Haram appears to be growing more lethal -- the group is thought to have killed thousands since 2009 and carried out several audacious large scale attacks on heavily fortified military targets in the last few months -- precious little is known about its leadership, organizational structure, funding streams, and membership. At any given time, a patchwork of armed groups or individuals in northern Nigeria may be carrying out attacks under the banner of Boko Haram.

Even its name, "Boko Haram" -- a phrase borrowed from the Hausa language native to northern Nigeria -- is an unofficial moniker ascribed from the outside that the group's core members do not use, preferring its official Arabic name of "Jamā'a Ahl al-sunnah li-da'wa wa al-jihād" instead.

Despite its Hausa name, the majority of its initial membership is believed to be ethnic Kanuri, from northeastern Nigeria. But over the course of the last decade, the group has metastasized, spreading throughout northern Nigeria and inserting itself within longstanding conflicts in the "middle-belt."

[32] Michael Olufemi Sodipo, "Mitigating Radicalism in Northern Nigeria, African Center for Strategic Studies, No. 26, August 2013.

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Boko Haram has deployed suicide bombs and coordinated assaults aimed at an array of targets, including markets, schools, hospitals, clinics, banks, churches, mosques, police stations and military installations. And while the scope and intensity of Boko Haram's terror campaign is breathtaking, the movement is not without its antecedents.

The previously discussed Sokoto Caliphate was an armed movement against what was perceived at the time to be the illegitimate rule of powerful elites who were misappropriating Islam. In fact, Dan Fodio's legacy of a purifying withdrawal from society in order to wage a righteous jihad against corrupting influences is seen by many northern Nigerian Muslims, including Boko Haram, as a template for a more just, prosperous and equitable northern Nigeria.[33]

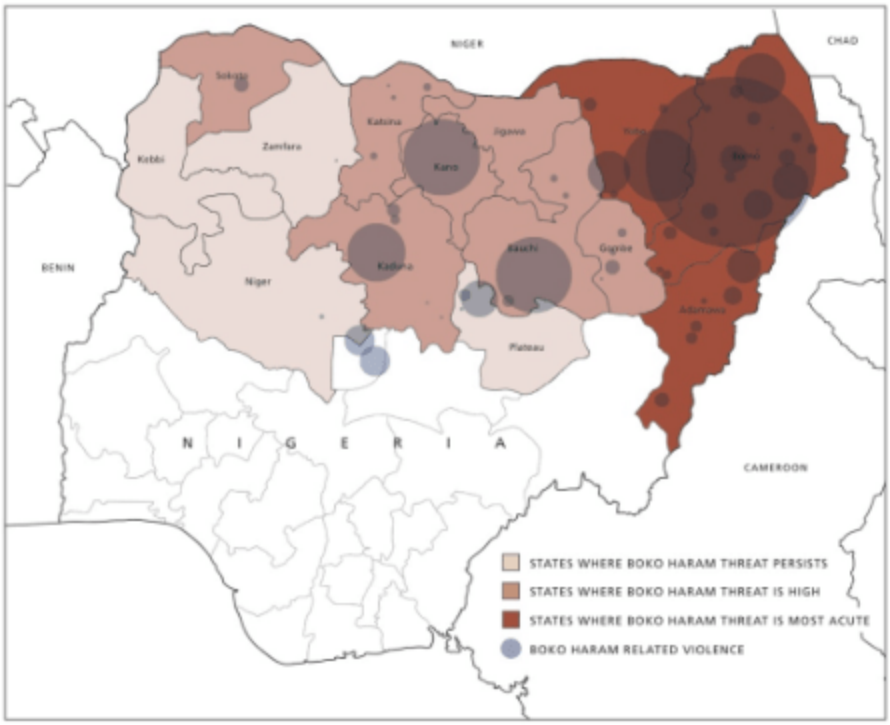
More recently, there was the Maitatsine movement, which was led by a Cameroonian preacher named Mohammed Marwa who took up the teachings of Dan Fodio after arriving in the northern Nigerian city of Kano in 1945. Marwa's preaching, predicated on the belief that he himself was a prophet, earned him the name Maitatsine, which translates from Hausa to mean "he who curses" or "the one who damns." Much like Dan Fodio, Marwa's movement stood against Nigeria's corrupt secular government and its allies within the "moderate" religious establishment. Marwa was eventually forced into exile by the British colonial government, but returned to Kano shortly after independence.

The Maitatsine message resonated with the young, poor and unemployed in the slums of Kano. Throughout the 1970s, the Maitatsine movement gradually turned violent, leading to clashes with police. Marwa was killed in 1980 during a confrontation with police, but even after his death, riots spread throughout northern Nigeria, claiming the lives of between 4,000 and 5,000 people.[34] The movement never quite recovered, but isolated pockets of extremism remained, and Maitatsine teachings are thought to be a source of ideological inspiration for Boko Haram.[35]

The Maitatsine movement introduced many of the tactics that would become common in northern Nigeria's current wave of Islamic radicalization (both violent and non-violent), particularly the mobilization of poor communities against established, urban Muslim elites perceived to be colluding with a corrupt, secular government.[36]

[33] David Cook, "The Rise of Boko Haram in Nigeria", CTC Sentinel 4, no. 9 (2011).
[34] Abimbola Adesoji, "The Boko Haram Uprising and Islamic Revivalism in Nigeria," Africa Spectrum 45, no. 2 (2010)
[35] Abimbola Adesoji, "The Boko Haram Uprising and Islamic Revivalism in Nigeria," Africa Spectrum 45, no. 2 (2010)
[36] Abimbola Adesoji, "The Boko Haram Uprising and Islamic Revivalism in Nigeria," Africa Spectrum 45, no. 2 (2010)

Figure 3: Areas where access is limited due to security concerns[37]



The Nigerian government successfully crushed the Maitatsine movement with brute force.[38] The success of these heavy handed tactics may have given the Nigerian government a false sense that Boko Haram was merely the latest manifestation of a violent Islamist undercurrent that could be stemmed through similar means.

But all accounts, attempts to crush Boko Haram through military might have proved unsuccessful, even counterproductive. Nigerian security forces cracked down on Boko Haram during mass uprisings in 2003-2004 and thought the problem had been dealt with, only to see Boko Haram re-emerge.[39] A 2009 attempt to deliver a decisive blow to Boko Haram in their stronghold of Maiduguri led to the death of at least 700 people. Boko Haram's then leader, Mohammed Yusuf, was captured by police and summarily

[37] Figure 3 source, Council on Foreign Relations, with modifications by the author
http://www.cfr.org/nigeria/nigeria-security-tracker/p2948
[38] Andrew Walker, "Special Report: What is Boko Haram?" United States Institute of Peace, June 2012.
[39] Alex Thurston, "Nigeria: An Ephemeral Peace," The Revealer, 22 June 2013.

executed.[40] After that episode, Boko Haram faded from public view for close to a year, only to come back more determined and lethal than before.[41]

As part of its operations against Boko Haram since 2009, the Nigerian government has allegedly killed hundreds of suspected militants and sympathizers, and have stood accused of extrajudicial killings as well as using Boko Haram as a cover for attacks on political rivals or as pretext for score-settling.[42]

During raids on suspected Boko Haram strongholds, the military has burned homes and summarily executed suspected Boko Haram members in front of their families. Nigerian authorities have cast a wide dragnet, arresting thousands of people across northern Nigeria, holding many of these prisoners incommunicado without charge or trial for months or even years. In some cases, prisoners have been detained in inhuman conditions, tortured or even killed.[43] Amnesty International reported receiving credible evidence that over 950 people have died in military custody in the first six months of 2013 alone.[44] The ongoing violence and abuse by government forces may even be driving new recruits into Boko Haram's arms.[45]

In the wake of an escalation of violence, Boko Haram and its followers are all the more driven by a desire for vengeance against politicians, police, and Islamic authorities aligned with the state. Furthermore, Boko Haram has proved itself to be very adaptable, evolving its tactics swiftly and changing its targets at the behest of a charismatic, if opaque leadership.[46]

Part of what makes understanding and defining Boko Haram so difficult is the fact that it may very well be several different things at once. As former US ambassador to Nigeria John Campbell told reporter Andrew Walker, Boko Haram is certainly a grassroots movement that taps into anger over poor governance and a lack of development in northern Nigeria, but it is also a core of Mohammed Yusuf's followers who have reconvened around Abubakar Shekau to exact revenge on the Nigerian state. At the same time, it can be viewed as a kind of personality cult, an Islamic millenarianist sect inspired by a charismatic preacher.[47]

Boko Haram's increased deadliness and the sophistication of its attacks are widely cited as evidence that they are collaborating with foreign groups. Its violent campaign has expanded in scope and capability, and its membership is believed to have diversified, with anecdotal evidence suggesting that foreign fighters from Chad, Mauritania, Niger, Somalia and Sudan may be in Boko Haram's ranks.[48]

In recent years, northern Nigeria has also seen the formation of splinter groups emerging from Boko Haram, the most prominent being a group commonly referred to as Ansaru, though its full Arabic name

[40] Rom Bhandari, "Boko Haram Infiltrates Government," Think Africa Press, 10 January 2012.
[41] Alex Thurston, "Nigeria: An Ephemeral Peace," The Revealer, 22 June 2013.
[42] Andrew Walker, "Special Report: What is Boko Haram?" United States Institute of Peace, June 2012.
[43] Human Rights Watch, "Nigeria: Massive Destruction, Deaths From Military Raid," 1 May 2013.
[44] Amnesty International, "Nigeria: Deaths of hundreds of Boko Haram supsects in custody requires investigation," 15 October 2013.
[45] Alex Thurston, "Nigeria: An Ephemeral Peace," The Revealer, 22 June 2013.
[46] Andrew Walker, "Special Report: What is Boko Haram?" United States Institute of Peace, June 2012.
[47] See John Campbell's quotes in Andrew Walker, "Special Report: What is Boko Haram?" United States Institute of Peace, June 2012.
[48] Abimbola Adesoji, "The Boko Haram Uprising and Islamic Revivalism in Nigeria," Africa Spectrum 45, no. 2 (2010)

Juma'atu Ansarul Muslimina Fi Biladis Sudan, translates to "Vanguards for the Protection of Muslims in Black Africa."[49]

Formed in January 2012, Ansaru explicitly targets Westerners in Nigeria and neighboring countries. Some analysts cite this goal as possible evidence that the once parochial ambitions of Boko Haram, or factions within Boko Haram, may now be international. In fact, since 2011, there have been increasing signs of international collaboration between Boko Haram and militants from Niger, Mali, the broader Sahel, Somalia and other countries throughout the Muslim world.[50]

In tandem with its deployment of security forces to crush Boko Haram, the Nigerian government has simultaneously attempted to negotiate with the group.

In 2011, democracy activist Shehu Sani attempted to broker exploratory talks between the former president Olusegun Obasanjo and Mohammed Yusuf's brother-in-law, Babakura Fugu. Soon after the meeting, gunmen stormed into Fugu's house and shot him dead. Boko Haram denied the killing and the assassins have not been identified.[51]

In January 2012, a group claiming to be a moderate breakaway faction of Boko Haram sent a tape to the National Television Authority saying it was ready to negotiate. Four days later a dozen people were publicly beheaded in Maiduguri by people claiming to be Boko Haram.[52]

Despite these setbacks, the administration of President Goodluck Jonathan has shown intermittent interest in the idea of dialogue with Boko Haram. The formation of the Committee on Dialogue and Peaceful Resolution of Security Challenges in the North of Nigeria, formed on April 24, 2013 is probably the most ambitious overture to date.[53] But there are several practical and political barriers to productive negotiations taking place.

To start with some of Boko Haram's stated demands are practically impossible to realize, and often contradictory.[54] The demand that Nigeria implement Islamic law nationwide, for example, is a non-starter. Second, finding credible representatives of Boko Haram who are serious about negotiations may not be possible, and even if it were, it is unclear that these representatives or interlocutors would be able to control other wings or factions within Boko Haram.[55]

There are some demands from Boko Haram which might be up for discussion, such as the release of senior members who are in captivity, the return of property taken from its members, and bring the people responsible for the extra-judicial execution of Mohammed Yusuf to justice.[56] But it is unclear what exactly Boko Haram has to offer the government short of dropping its core demands in the first place.

[49] Abimbola Adesoji, "The Boko Haram Uprising and Islamic Revivalism in Nigeria," Africa Spectrum 45, no. 2 (2010)
[50] Jacob Zenn, "Boko Haram's International Connections," CTC Monitor, 14 January 2013.
[51] Andrew Walker, "Special Report: What is Boko Haram?" United States Institute of Peace, June 2012.
[52] Andrew Walker, "Special Report: What is Boko Haram?" United States Institute of Peace, June 2012.
[53] Alex Thurston, "An Ephemeral Peace," The Revealer, 22 June 2013.
[54] Andrew Walker, "Special Report: What is Boko Haram?" United States Institute of Peace, June 2012.
[55] Alex Thurston, "Nigeria: An Ephemeral Peace," The Revealer, 22 June 2013.
[56] Andrew Walker, "Special Report: What is Boko Haram?" United States Institute of Peace, June 2012.

Second, offers of amnesty and calls for negotiations with Boko Haram may be politically unpopular with Christians and the vast majority of Muslims in Nigeria who oppose the group. The fact that previous ceasefires and attempts at negotiations have collapsed, and that communities affected by the crisis are growing impatient, may strengthen the hand of those who prefer a military solution to the crisis. As researcher Alex Thurston writes, "the limitations of military approaches may soon lead Nigeria back to the hope of dialogue, and the difficult question of how to break the cycle of ineffective crackdowns and inconclusive negotiations."[57]

The Polio Epidemic in Context

Despite an array of political and economic challenges, Nigeria had made significant strides in eradicating polio from 1996 to 2001, with a dramatic expansion of coverage via National and Subnational Immunization days. In the wake of a significant drop in reported cases, there was increasing optimism that the 2005 global eradication target might be met.[58] Hopes of meeting that target, however, were subsequently dashed with the onset of a vaccination boycott throughout much of Nigeria.

The 2003 Boycott

In 2003, the political and religious leadership of Kano, Zamfara and Kaduna states in northern Nigeria brought the immunization campaign to a halt, urging parents not to immunize their children. Among the initial reasons listed for the boycott were allegations that the vaccine had been contaminated with anti-fertility agents, HIV, and could cause cancer.[59]

Local media at the time reported that the formal boycott began at a July 2003 meeting of an influential network of Muslim organizations called Jama'atul Nasril Islam (JNI), in which one of the Emirs in northern Nigeria "presented a memo on the concerns and apprehensions of his people on the allegations that the polio vaccination campaign was being used for the purposes of depopulating developing countries and especially Muslim countries."[60]

At the forefront of the boycott was Datti Ahmed, a physician based in Kano who heads a prominent Muslim group called the Supreme Council for Sharia in Nigeria (SCSN). At the time of the boycott, Ahmed was quoted in a South African news outlet asserting that vaccines were "corrupted and tainted by evildoers from America and their Western allies."[61] Dr. Ahmed, who had only a year earlier called for a boycott of the Miss World pageant in Abuja on religious grounds, voiced his opposition to the polio vaccination in stark terms. "We believe that modern-day Hitlers have deliberately adulterated the oral polio vaccines with anti-fertility drugs and contaminated it with certain viruses which are known to cause HIV and AIDS."[62]

[57] Alex Thurston, "Nigeria: An Ephemeral Peace," The Revealer, 22 June 2013.
[58] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.
[59] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/
[60] "Nigeria Polio Vaccine: Controversy Over or Renewed?" Weekly Trust, 6 March 2004.
[redacted]
[61] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/
[62] Laurie Garret and Scott Rosenstein, "Polio's Return," The American Interest, 1 March 2006. http://www.the-american-
[redacted]

The ban quickly divided Muslim leaders, many of whom were embarrassed by the political undertone of the boycott.[63] Prominent Islamic scholar Sheikh Yusuf Qaradawi was quoted as saying, "I was completely astonished about the attitude of our fellow scholars of Kano towards polio vaccine. I disapprove of their opinion, for the lawfulness of such vaccine in the point of view of Islam is as clear as sunlight." Citing the fact that the vaccine was administered in over 50 Muslim countries, Sheikh Qaradawi accused the SCSN of creating a negative images of Islam which "make it appear as if it contradicts science and medical practice."[64]

Despite widespread criticism of the ban, many local political, community and religious leaders began fueling rumors that the vaccines were unsafe, encouraging their followers and constituents to boycott. Kano's then-governor Ibrahim Sekarau suspended the administration of the vaccine, and state governments in Bauchi, Kaduna and Zamfara soon followed.

This was not the first time that rumors about safety have plagued immunization campaigns, nor is skepticism about them confined to non-western countries. But the initial assumption that these baseless rumors would be short-lived demonstrated a fundamental lack of understanding of the context within which these vaccination campaigns were taking place.

The Nigerian director of the United Nations Children's Fund (UNICEF) told researchers Judith R. Kaufmann and Harley Feldbaum, "Our own Western-oriented…background tells us if vaccine is found to be good, then it's scientifically good, that's it. …Instead, the population who rejected it was thinking in other terms, and we didn't realize the power of that and how disruptive that could have been. …We didn't see it coming, and unfortunately that is quite normal."[65]

It soon became abundantly clear that the polio vaccination boycott was due to a combination of political, ethnic, and religious tensions brought to the fore by the April 2003 re-election of President Olusegun Obasanjo.

A born-again Baptists Christian from southern Nigeria, Obasanjo's election to a second term over retired General Muhammadu Buhari, a Muslim from northern Nigeria, exacerbated existing tensions over regional disparities over government services, including health services.[66]

Upon losing the election, General Buhari's All Nigeria People's Party (ANPP) challenged the victory of President Obasanjo's People's Democratic Party (PDP) in Nigeria's Supreme Court. Kano, for example, was a state under the control of the ANPP challenged the polio vaccination exercise organized by the PDP-controlled federal government.[67] Some observers suspected that northern political leaders calling

[63] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/
[64] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/
[65] Judith R. Kaufmann and Harley Feldbaum, "Diplomacy And The Polio Immunization Boycott In Northern Nigeria," Health Affairs, 28, no.4 (2009):1091-1101
[66] Judith R. Kaufmann and Harley Feldbaum, "Diplomacy And The Polio Immunization Boycott In Northern Nigeria," Health Affairs, 28, no.4 (2009):1091-1101
[67] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/

for the boycott did so less out of concerns for community safety, and more as a means of the federal "southern" government.[68]

It is also important to take into account the fact that comparative rates of using health services in southern Nigeria versus northern Nigeria differ dramatically. In 1990, the comparative rates between north and south were 50% versus 18%. In 1999, the disparity had grown to 60% versus 11%. By 2003, at the time of the boycott, the gap had widened to 64% versus 8%.[69]

Nigeria's health system decentralizes administrative control over primary and secondary health to states, while the federal government maintains control of care at the tertiary level. As a result, states like Kano, Zamfara, Bauchi and Kaduna were able to halt immunization exercises planned by the federal government.[70]

As reports of the vaccine boycott spread, parents began actively refusing vaccination when health workers came to their homes, some going so far as to mark the doors of their homes to falsely signal that a health worker had already visited, and putting nail polish on their children's fingers to mimic the ink that signifies that a child has been vaccinated.[71]

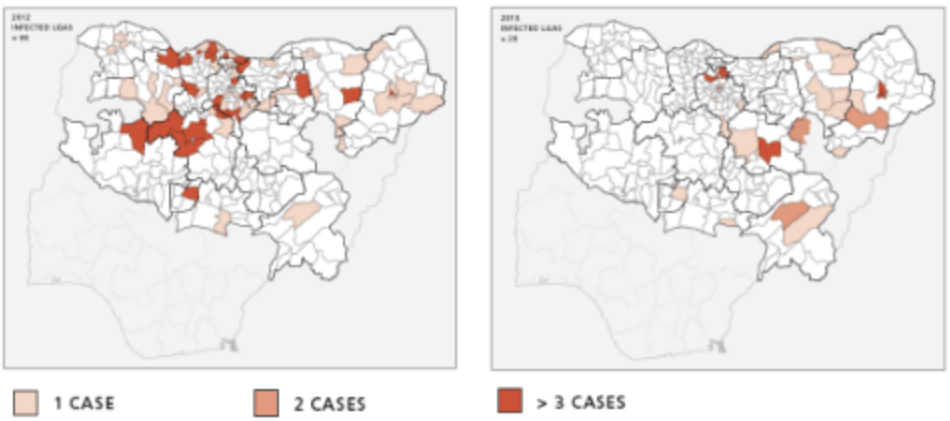


Figure 4: Restriction of wild polio virus spread in 2013, compared to 2012[72]

There is also an important historical and social context in which the boycott should be viewed.

[68] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.
[69] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/
[70] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/
[71] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.
[72] GPEI, http://www.polioeradication.org/Portals/0/Document/InfectedCountries/Nigeria/Nigeria_NationalPolioEradicationEmergencyPla[redacted].pdf

Barriers to Polio Eradication in Nigeria

In 2000, Alhaji Najib Hussain Adamu, the Emir of Kazuare in Jigawa state in northern Nigeria and one of the first leaders to spearhead the anti-vaccination campaign in northern Nigeria, began taking notice of confusion within his community stemming from the arrival of outsiders coming to houses to vaccinate children with drops of oral polio vaccine. Relatively few people were afflicted with polio, whereas other health concerns, namely malaria, were widespread in their communities.[73]

It is not hard to imagine that an aggressive, mass immunization program based on door-to-door visits by strangers might illicit suspicion, especially in a context in which access to basic healthcare is not easily available.[74] As John Murphy of the Baltimore Sun wrote at the time:

> The aggressive door-to-door mass immunizations that have slashed polio infections around the world also raise suspicions. From a Nigerian's perspective, to be offered free medicine is about as unusual as a stranger's going door to door in America and handing over $100 bills. It does not make any sense in a country where people struggle to obtain the most basic medicines and treatment at local clinics"[75]

A lawyer by training, Emir Adamu began to do research on the vaccine on the internet, where he found a variety of sources and documents offering "evidence" of an ulterior motive behind polio vaccine campaigns. One such claim suggested that that the oral vaccine, which was created using monkey cells, was contaminated with a host of monkey viruses, including a close relative to HIV, thus supporting the theory that the polio vaccine spawned the modern AIDS pandemic.[76]

Another document which caught the Emir's attention, which is not related to vaccination campaigns or HIV/AIDS, was the National Security Study Memorandum 200, authored in 1974 by then U.S. Secretary of State and National Security Advisor Henry Kissinger. The obscure memorandum suggests that rapid population increases in the developing world can generate threats to national security through regional destabilization and resource scarcity. The memo, which suggests that the U.S. promote family planning in certain countries, including Nigeria, has since gained notoriety in certain circles in Nigeria and is cited as evidence of a stealth policy by the U.S. to reduce Nigeria's population.[77]

Distrust of Western health interventions in northern Nigeria, however, predate the "investigative" work of Emir Adamu and Dr. Datti Ahmed. In 1996, the American pharmaceutical giant Pfizer began testing its drug Trovan on children in Kano during a bacterial meningitis outbreak in northern Nigeria. Years later, a suit filed on behalf of those children at the Federal District Court in Manhattan alleged that parents

[73] Laurie Garret and Scott Rosenstein, "Polio's Return," The American Interest, 1 March 2006. http://www.the-american-[redacted]

[74] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/

[75] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/

[76] Laurie Garret and Scott Rosenstein, "Polio's Return," The American Interest, 1 March 2006. http://www.the-american-[redacted]

[77] For more on this subject, see: Laurie Garret and Scott Rosenstein, "Polio's Return," The American Interest, 1 March 2006. [redacted]

were not informed that the drug was experimental, nor that they could refuse the drug if they chose, or that another organization was offering an internationally approved treatment for free at the same site.[78]

The same suit also accused Pfizer of administering low dosages of the meningitis treatment ceftriaxone to improve the relative effectiveness of Trovan, and that these low doses of ceftriaxone were responsible for injuries and death, while Trovan was responsible for cases of brain damage, loss of motor skills and death of several of the participants of the study.[79]
Current polio eradication efforts should be sensitive to the legacy of distrust that many Nigerians have because of the Memorandum 200 affaire. When they cite Memorandum 200, even if they are misinterpreting its meaning, that document, which says that curbing Nigeria's population growth is in the U.S. national interest, actually exists. To dismiss the concerns of those who cite these examples outright is to fundamentally ignore the context within which vaccination campaigns in northern Nigeria must take place. It also fails to empathize with the northern Nigerian parent who, in the face of conflicting information from a range of sources, just wants to do what is best for his children and may err on the side of not letting a foreigner or outsider vaccinate them.

In response to the public outcry about the polio vaccine, the Nigerian federal government set up a technical committee to assess the safety of the polio vaccine. A key component of the committee's work was to send samples of the vaccine for laboratory tests abroad to prove its safety. The results were rejected by the SCSN, however, on the grounds that the Muslim community was not adequately represented on the committee.[80]

The federal government responded by forming another technical committee, which this time included members of JNI -- the Muslim group that initially spearheaded the boycott -- but the SCSN again rejected the committee, asking for the inclusion of its own nominees.[81]

Despite the fact that Kano saw a 30% increase in polio during this time, the Kano State Government justified its opposition at the time, arguing that it was the "lesser of two evils, to sacrifice two, three, four, five even ten children to polio than allow hundreds of thousands or possibly millions of girl-children likely to be rendered infertile."[82]

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[78] Laurie Garret and Scott Rosenstein, "Polio's Return," The American Interest, 1 March 2006. http://www.the-american-

[79] Laurie Garret and Scott Rosenstein, "Polio's Return," The American Interest, 1 March 2006. http://www.the-american- For more on the investigation, see: Joe Stephens, "Panel Faults Pfizer in '96 Clinical Trial in Nigeria," The Washington Post, 7 May 2006. dyn/content/article/2006/05/06/AR2006050601338.html; Joe Stephens, "Pfizer Faces Criminal Charges in Nigeria," The Washington Post, 30 May 2007 Joe Stephens "Pfizer to Pay $75 Million to Settle Nigerian Trovan Suit," The Washington Post, 31 July 2009 and Donald G. McNeil Jr., "Nigerians Receive First Payments for Children Who Died in 1996 Meningitis Drug Trial," The New York Times, 11 August 2011
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[80] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/

[81] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/

[82] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/

The deadlock was eventually resolved in July 2004 when religious leaders were recruited to engage SCSN and those who opposed the vaccine. These meetings led to a consensus in February 2004 to test the vaccine independently in a Muslim country.[83] Kano state governor Ibrahim Sekarau finally decided to end the 11-month boycott after the vaccine obtained a seal of approval from Biopharma, an Indonesian company which, thanks to the fact that Indonesia is a Muslim country, was recommended to become the new supplier of polio vaccines for the predominantly Muslim states in northern Nigeria.[84]

In retrospect, the major breakthroughs in ending the impasse had much more to do with diplomacy than the triumph of science. In the midst of the boycott, for example, U.S. Secretary of State Colin Powell and UNICEF headquarters suggested to UN Secretary-General Kofi Annan that he send Ibrahim Gambari, the secretary-general's advisor for African affairs, to Nigeria as a special envoy. As researcher's Judith R. Kaufman and Harley Feldbaum explain:

> Normally, the UN Secretariat would not send a national of a country to negotiate in his or her country of origin, for fear of conflict of interest or pressure being put on the individual. However, in this case, most felt that Gambari was uniquely qualified. Gambari's father was a Muslim northerner and Emir of Ilorin, and his mother was a southerner. Gambari has served under virtually all of the surviving former Nigerian presidents, including those with presumed influence in the North, and had managed President Obasanjo's 1991 campaign to be UN secretary-general.[85]

Gambari was dispatched by Obasanjo to meet with the Sultan of Sokoto, the Emir of Kano, several high-profile traditional Muslim leaders, prominent politicians such as General Buhari, and even Datti Ahmed. During these trips, the complexity of the issue at hand became apparent.

In Sokoto, for example, Gambari realized that although the Sultan of Sokoto is traditionally the spokesman for the Muslims of the region, he is also the head of JNI. The secretary-general of the JNI, however, was one of the earliest and most steadfast opponents of polio immunization. Though Gambari left Sokoto with assurances from the Sultan that he agreed the boycott was harmful to the population, it was possible that others within the religious establishment would continue to oppose polio vaccines.[86]

Gambari's trip to Kano proved more difficult, and highlighted the political aspect of the boycott. The governor of Kano was a member of General Buhari's party and had political incentives to oppose President Obasanjo.[87]

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[83] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/

[84] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/

[85] Judith R. Kaufmann and Harley Feldbaum, "Diplomacy And The Polio Immunization Boycott In Northern Nigeria," Health Affairs, 28, no.4 (2009):1091-1101

[86] Judith R. Kaufmann and Harley Feldbaum, "Diplomacy And The Polio Immunization Boycott In Northern Nigeria," Health Affairs, 28, no.4 (2009):1091-1101

[87] Judith R. Kaufmann and Harley Feldbaum, "Diplomacy And The Polio Immunization Boycott In Northern Nigeria," Health Affairs, 28, no.4 (2009):1091-1101

Barriers to Polio Eradication in Nigeria

In tandem with Gambari's shuttle diplomacy in northern Nigeria, the DPEI Secretariat reached out to the Organization of the Islamic Conference (OIC) to "defuse the idea that GPEI and WHO were controlled by Western donors."[88] This engagement eventually led to the OIC passing a resolution urging the remaining polio-endemic OIC countries to accelerate their efforts to eradicate polio.[89] At the same time, the U.S. began putting diplomatic pressure on Nigeria by raising the profile of polio in its bilateral discussions, and having its ambassadors reach out to their counterparts in other countries to do the same.[90]

By April 2004, the governor of Kano was the sole government official opposing immunization, and it is impossible to know what exactly led to his decision to finally end the boycott. There may have been an internal Nigerian deal, or it could be that the official boycott had outlived its political usefulness. Another possibility could be Kano's negative image worldwide. The WHO reported that 80% of global cases of polio paralysis in the world originated from Kano, and several countries were considering placing travel restrictions on travelers from Kano, which would have precluded those from Kano from participating in the Hajj (pilgrimage to Mecca) in Saudi Arabia unless they were vaccinated at the airport.[91]

The external diplomatic efforts eventually helped bolster efforts from within Nigeria. Within a year of the formal end to the boycott, many of the same religious and political leaders who had questioned the safety of the vaccine became vocal proponents of polio vaccination.[92] In 2004, both the governor and emir of Kano participated in national immunization drives, with Governor Shekarau even allowing President Obasanjo to publicly administer the drops to his one-year-old daughter. In 2006, the newly appointed Sultan of Sokoto also became a champion of polio immunization, working to convince local and traditional leaders of the merits of the campaign.[93]

Lessons and Outcomes from the Boycott

The vaccine boycott in northern Nigeria was the result of a complex nexus of factors, including a lack of trust in modern medicine, political and religious motives, strained north-south relations, a history of perceived betrayal by the federal government, the medical establishment and big business, and a conceivably genuine, even if misguided attempt by the local leaders to protect their people.[94]

One of the key lessons of the boycott is that while public health officials might normally view polio eradication as a "technical" problem to be solved by science, innovation and effective program implementation, in Nigeria, polio eradication is a political endeavor. It is also affected by an increasingly unstable security situation in the north.

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[88] Judith R. Kaufmann and Harley Feldbaum, "Diplomacy And The Polio Immunization Boycott In Northern Nigeria," Health Affairs, 28, no.4 (2009):1091-1101

[89] "Resolution N. 14/31-S&T on Global Cooperation In Polio Eradication Programme Among OIC Member States" Organization of the Islamic Conference, 14-16 June 2004. http://www.polioeradication.org/content/publications/OIC_resolution_0604.pdf

[90] Judith R. Kaufmann and Harley Feldbaum, "Diplomacy And The Polio Immunization Boycott In Northern Nigeria," Health Affairs, 28, no.4 (2009):1091-1101

[91] Judith R. Kaufmann and Harley Feldbaum, "Diplomacy And The Polio Immunization Boycott In Northern Nigeria," Health Affairs, 28, no.4 (2009):1091-1101

[92] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.

[93] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.

[94] A.S. Jegede, "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" PLoS Medicine 4, no. 3 (2007) : e73; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1831725/

An outgrowth of this lesson was the realization that because the issue of polio eradication in northern Nigeria is a political issue as much as it is scientific one, diplomacy needs to be an essential component of eradication efforts.

Though the boycott began at the subnational level in Nigeria, it has global ramifications and set back eradication efforts in other countries. It took a network of international organizations and NGOs, pressure from diplomats, and the enlistment of groups like the OIC that are not normally considered within the purview of global health to solve the crisis.

The global public health community has since done an admirable job of taking the spread of false information seriously, and understanding that these rumors are often grounded in assertions that are either partially true, or make sense within their own context. Public health officials have become much better at engaging communities and coming to grips with the socio-political nature of this campaign. They have thought outside the box, reaching out to religious organizations, women's organizations, even artists to develop campaigns.

Overall, far greater care has been taken to understand and respond to the concerns of communities at the micro-level and to work with and through those interlocutors who are best positioned to reach and persuade potentially reluctant families to participate. Efforts have been linked to incentives for parents, including cash transfers, vitamin A provisions, de-worming tablets, antimalarial bed nets.[95]

National authorities have also reaffirmed their commitment to eradicating polio, offering vocal advocacy and pledging considerable federal funds to eradication efforts. In recent years, there has been an increased, if intermittent, state-level commitment from governors who have become more energized and supportive of the campaign. Some states have even introduced elements of coercion. In mid-2011, three states threatened to fine or imprison parents who refuse to vaccinate their children and to prosecute public health workers who fail to report refusals.[96]

[95] IRIN News, "Nigeria: Vitamin A Handouts Boost Polio Eradication Efforts," June 14, 2010, http://www.irinnews.org/report.aspx?reportid=89470.
[96] IRIN News, "Nigeria: Jail Threat for Polio Vaccination Refuseniks," August 11, 2011, http://www.irinnews.org/report.aspx?ReportId=93480.

Findings from the Field: Existing Barriers, Emerging Challenges

The field interviews carried out for this paper suggest that while the public health community has made considerable strides since the 2003 boycott, several barriers to polio eradication persist and new challenges to polio eradication in northern Nigeria are emerging.

Health Care Infrastructure

Overall dissatisfaction with the healthcare system

One key finding that was evident across all of the states in northern Nigeria is broad dissatisfaction with the healthcare system. Most of those interviewed maintained that access to healthcare facilities are in poor condition and not keeping pace with population growth. Several of those interviewed suggested that health-workers and doctors seemed more trained and qualified than in previous years, but still lacked the equipment and facilities necessary to carry out their work.[97]

Poor health care Infrastructure

While many governments in West Africa are nominally decentralized, Nigeria's governance structures are highly decentralized in a way that makes politics, and therefore health service delivery, a multi-layered process with a complicated and unclear division of responsibilities. Funding flows are unclear and unpredictable, while accountability is almost non-existent.[98]

Working in the health sector requires engaging the Federal Government, State Government and lower levels such as LGAs and wards. At every level, government officials are entirely capable of blocking programs that they either do not approve of or feel were not sufficiently channeled through them. A considerable amount of time and energy is spent working with local governments and keeping them sufficiently satisfied. [99]

Every layer of government represents a potential new blockage, as many office holders and administrators view it as a legitimate right to hold processes up for personal gain. Matters are further complicated by deeply entrenched party politics and patronage networks. The GPEI must operate within these systems where patronage and corruption are not only endemic, but systemic. They are present at every level vertically, and sprawl horizontally.[100]

Negative public opinion

Public opinion about vaccinations leading to refusal

Refusal of vaccinations, or "non-compliance," was also widely cited as a major roadblock to polio eradication. However, some of the motivation commonly attributed to why people refuse to vaccinate their children did not come up in the interviews. Rumors of pork being in the vaccine or that the CIA uses health workers as spies (as was the case in Pakistan in the hunt for Osama Bin Laden) were not mentioned.

[97] Interviews in northern Nigeria. January, 2014.
[98] Interviews with health-sector NGO workers in Abuja. December 2013.
[99] Interviews with health-sector NGO workers in Abuja. December 2013.
[100] Interviews with health-sector NGO workers in Abuja. December 2013.

The most common reason provided for non-compliance were that they believed that the polio vaccine was a "Western" or "American" attempt to sterilize Muslim children, so as to diminish the Muslim population.

"We are meant to understand that it can make girls barren. They said it can also be used to transmit deadly disease so that our populations can be reduced," said a 45-year-old businessman and father of eight from Katsina state.[101]

A 55-year-old Islamic cleric in Bauchi state, for example, claimed that polio is a "Western creations" and described the vaccine as "un-Islamic," but couched his opposition in slightly different terms, highlighting the aspect of foreign imposition. "Polio campaign will still be 100% unsuccessful in northern Nigeria until and unless the issue is done with sincerity and honesty. It is a plan to undermine Muslims and our own values," he said.[102]

Field interviews also suggested that opposition to polio vaccination does not necessarily go hand in hand with opposition to modern medicine. Another man from Kano, for example, said that he trusts health workers, but not if they are working with polio campaigns. He asserts that polio is a "jinn related disease" (brought on by spiritual entities) and that the government is only championing polio because it is "another way of siphoning funds by government from foreign bodies."He does not vaccinate his children because he does not believe in the same way that "the government and white-man are thinking."[103]

Another interviewee in Kano state, expressed similar beliefs. He trusts healthcare workers, but not when they come with polio vaccines. "I was of the opinion that it was a jinn-related health problem. But I am beginning to be confused with the aggressive government media campaign about it."[104] Several interviewees suggested that those who oppose the vaccine don't necessarily believe that polio does not exist, but that it does not exist in the way that the government and health care providers believe it does.

A 32-year old father of six from Tudun Fulani, Kano, stated his opposition in more concrete terms. "Polio campaigns," Mr. Musa said, "is only government that is trying to deceive public with its campaign against the disease." When asked why he does not vaccinate his children, Mr. Musa offered a straight forward response. "It is against my culture," he said.[105]

Other respondents who oppose the vaccine cited the fact that they do not trust putting the well-being of their children in the hands of vaccinators. "I will not accept anything (sic) polio from anybody. They are my children so nobody has authority over them above me," said a 45 year-old civil servant from Kano.

Another interviewee from Eudun Wada, Gusau, Zamfara state, also said he was suspicious about

[101] Interview in Katsina, northern Nigeria. January 2014.
[102] Interview in Bauchi, northern Nigeria, January, 2014.
[103] Interview in Kano. January, 2014.
[104] Interview in Kano. January, 2014.
[105] Interview in Kano. January, 2014.

vaccinators. "Most of the workers are not friendly and there is a shortage of drugs," he explained, saying that "no concrete convincing explanation" has been given about polio vaccines.[106]

Though field interviews suggested that polio vaccination campaigns have a unique stigma, it is not an anomaly. Access to healthcare and delivery of healthcare services is nowhere near adequate in northern Nigeria. It is important to remember that GPEI is trying to eradicate polio within a healthcare framework that is failing to deliver even the most basic services. Improving over-all quality and capacity is necessary. Polio is a much bigger healthcare problem.

Overemphasis on polio vaccinations fuels conspiracy theories

Another key finding of the field interviews is the role that an disproportionate focus on polio within the context of a failing public health system plays in reinforcing conspiracy theories. None of the people interviewed listed polio as their number one health priority or health concern. Instead, the majority of respondents listed malaria typhoid and water sanitation as their main preoccupations. Another interviewee who opposes polio vaccines, cited the government's obsession with polio as evidence of a probably ulterior motive. "We also hear that countries like USA give [the vaccines to] Nigeria free. Why not give us drugs on malaria which is very prevalent," he asked.[107]

This line of thinking also translates to non-compliance for political, rather than religious or cultural reasons. Marginalized communities, who feel left behind by the state, are experiencing "eradication fatigue," and the perceived obsession by outsiders with vaccinations has alienated some communities, who view vaccinations as the only thing they ever get from the their government.

The narrative coming out of some of these communities is that they ask for wells, they get vaccinations. They ask for paved roads, they get vaccinations. They ask for cash transfers, they get vaccinations. To that end, non-compliance is often a political statement rather than an expression of culture or religion. It is an act of protest born out of the fact that for some of these communities, it is the only opportunity they get to interact with and express displeasure with their government.[108]

The risk of continued politicization of the issue is particularly acute in the run-up to and in the wake of elections.

Negative public opinion about polio vaccinations has different reasons

In 8 of the 10 states where fieldwork was carried out for this report, those who refuse to vaccinate their children were almost always described as rural, undereducated or illiterate who were simply misinformed or following the guidance of misguided Imams. But in Borno state, interviews suggested a different narrative.

According to officials at the Emergency Operation Centre (otherwise known as Child Survival Centre) within the Metropolis of MMC and Jere, "the highest level of resistance being recorded is in elite communities like the University of Maiduguri and other tertiary institutions of learning." In these settings, "elites still propagate the so-called conspiracy theory within the university environment and or

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[106] Interview in Zamfara, northern Nigeria. January 2014.
[107] Interview in Katsina, northern Nigeria. January 2014.
[108] Interview with diplomat in Abuja, December 2013.

the academics there look down on the local immunizers as not capable, given their little educational background, to administer any form of vaccine in their wards."[109]

Throughout Borno state, a range of barriers to polio eradication were cited by interviewees. In the city of Maiduguri, as stated above, resistance appears to stem from elites in academia, who are suspicious of the polio campaign.

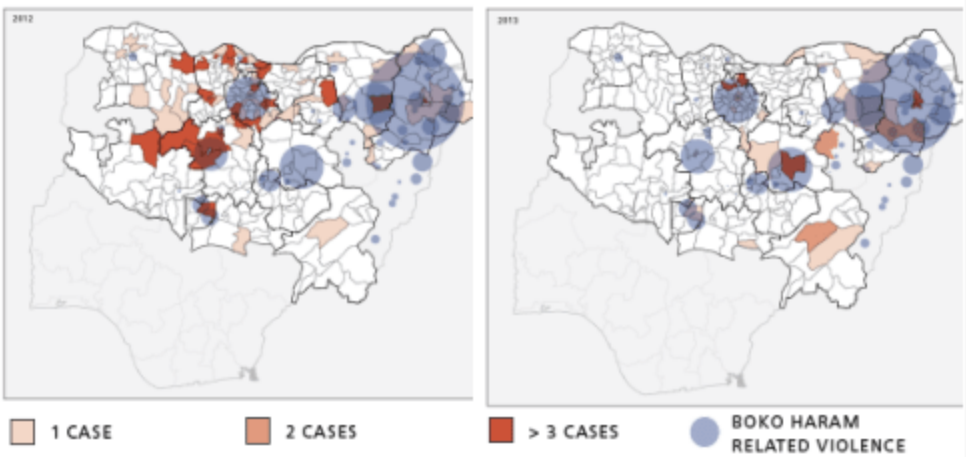


Figure 6: Comparing the Intersection of polio cases with Boko Haram related violence, 2012-13[110]

Ongoing security challenges also limit the mobility of vaccinators, as shown clearly in the diagram above. In Jere, non-compliance is more often attributed to beliefs that the vaccine is a form of birth control. In Bama, extreme insecurity and ongoing violence prevent immunization rounds from taking place, whereas in Damboa and Dikwa, insecurity remains a serious barrier, in tandem with high rates of refusal as a means of protesting over the basic lack of health and social amenities.[111]

"They want to know why polio vaccine is being given free while they have to pay for drugs for malaria, typhoid, diabetics, diarrhea, cold etc," said one local journalist. "They would want to know why the government is paying so much, going into nooks and cranny to eradicate a disease that is, to them, not visible or verifiable or even very common when they have more pressing needs like potable water, roads, dispensaries, and schools which have not been provided by the government."[112]

Another interviewee described the motives behind non-compliance in much more blunt, political terms referring to the local government. "You don't patronize us when you share food items during Sallah or

[109] Interview in Borno, January 2014.
[110] Figure 6 overlays GPEI data shown in figure 4, with security data found in figure 3.
[111] Interview in Borno, January 2014.
[112] Interview in Borno, January 2014.

Christmas celebrations, except your party followers," he said. "Now because this is polio, which will not fill our stomachs, you come knocking and begging us to take it in order to please America."[113]

In Yobe state, which has also been hit hard by the ongoing war between Boko Haram and state security services, resistance to polio vaccines is thought to be less pronounced than in Borno, with high areas of non-compliance concentrated by the frontier towns near the border with the Republic of Niger.[114]

Taken together, the interviews conducted across all ten states indicate that awareness campaigns, community outreach, enlistment of religious leaders and micro-plans have significantly reduced rates of non-compliance. Several people interviewed claimed that they once opposed vaccinated their children, but have since become advocates.[115] This is undoubtedly good news.

But it is important to keep in mind that Boko Haram challenges the legitimacy of not only the state, but also the traditional religious hierarchy within northern Nigeria which they see as corrupted by the political system. Their ideology is inherently subversive, and could potentially make the enlistment of prominent leaders such as the Sultan of Sokoto or Emir of Kano less effective in the future.[116]

Unstable political and security situation

Elections in 2015 are anticipated to slow polio eradication efforts down

Several interviewees, including health workers, local politicians, and diplomats cited "2015," when hotly contested Presidential as well as a host of other national and local elections are slated to take place, as a potential problem for polio eradication. There remains a serious risk that north-south and state-federal battles may play out again in the public health arena.[117]

The Federal Government is on board with efforts to eradicate polio. In fact, it considers failures to eradicate polio an embarrassment. Political will at the level of local governments, however, remains a roadblock. With the February 2015 campaign just around the corner, eradication is likely to become a lower priority, with energy and resources diverted elsewhere. Disruptions in health-services delivery due to post-election violence is considered all but inevitable.[118]

Security situation making regions inaccessible for vaccinations

In Borno state and Yobe state, where the war against Boko Haram has rendered entire swaths of territory off limits, the challenge of eradicating polio is has an added security dimension.[119] Almost everyone interviewed in Borno and Yobe state listed security as their primary concern for themselves and their families, and worried that the security situation is likely to continue deteriorating.[120]

As one journalist in Maiduguri, the capital of Borno state explained, "Borno state is presently the epicenter of the Boko Haram terrorism… There is high tension and insecurity challenges have hampered

[113] Interview in Borno, January 2014.
[114] Interviews in Yobe, January 2014.
[115] Interviews across northern Nigeria, December 2013 andJanuary 2014.
[116] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.
[117] Interviews in Abuja, December 2013. Interviews in northern Nigeria, January 2014.
[118] Interviews in Abuja, December 2013. Interviews in northern Nigeria, January 2014.
[119] Interviews in Abuja, December 2013. Interviews in northern Nigeria, January 2014.
[120] Interviews in Borno, January 2013. Interviews in Yobe, January 2013.

development especially in the above mentioned areas [Maiduguri, Jere, Bama, Damboa and Dikwa] where there is a high rate of resistance to polio vaccines. The economy of the state which revolves around subsistence agriculture, fishing and commerce, has been nearly crippled due to the insurgency. In terms of development, government has not done very well in providing amenities like water, electricity, healthcare facilities, job for the youths, good roads, education facilities and security."[121]

"The security issue is even more disturbing," he continued, "as the major security agencies like the policy and army lack manpower to cover remote areas of the state; this also gives enough ground for the Boko Haram insurgency to thrive."[122]

Lack of information and feedback about the security situation

Health workers have to rely on day to day assessments from the civilian Joint Task Force (JTF), an ostensible state sanctioned militia for up to date security information. Some donors and implementers are reluctant to integrate their work with vigilante groups, as it may increase the chances that health workers will be targeted.[123]

This fear is almost certainly warranted. In December, Boko Haram reportedly bombed the offices of the Borno State National Program on Immunization in the state capital of Maiduguri. Motives for the attack are not clear, but it highlight the fact that Boko Haram, or at least factions within it, view any government building as a legitimate target.[124] There are also rumblings that the Nigerian government might seek to have the military or civilian JTF carry out polio vaccinations.[125]

Operational issues

Lack of coverage and monitoring of vaccination campaigns

Evidence from interviews, in conjunction with existing literature and reports on the subject, suggest that rather than randomly missing some children each year, vaccination campaigns are consistently missing the same children and households with each round of immunizations.[126] GPEI has stepped up efforts to strengthen micro-plans that drill down to individual households to ensure all children are vaccinated and are increasingly incorporating GPS and GIS technology to track the movement of vaccination teams and identify areas, communities, and even individual homes that have been missed.[127]

But despite these efforts, there are glaring weaknesses in monitoring and evaluation. A preference for frequent, almost continual rounds of vaccinations by influential donors and implementers might be hindering overall abilities to evaluate programs. The "shotgun approach," while understandable given the desire to eradicate polio as soon as possible, runs counter to the goal of targeted interventions.[128]

[121] Interview in Borno, January 2013.
[122] Interview in Borno, January 2013.
[123] Interviews in Abuja, December 2013. Interviews in northern Nigeria, January 2014.
[124] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.
[125] Interview with diplomat in Abuja, December 2013.
[126] Interview with NGO officials and diplomats in Abuja, December 2013. See also: Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.
[127] Jennifer G. Cooke and Farha Tahir, "Polio Eradication in Nigeria: The Race to Eradication," CSIS Global Health Policy Center, February 2012.
[128] Several interviewees in the public health sector referred to initiatives that encouraged wide-ranging, near constant rounds of routine immunizations as the "shotgun approach," in contrast to more precise targeting of certain communities.

Interventions need to be precise, but collecting the requisite information that would allow for precision has not been done and probably cannot be done unless vaccination rounds are carried out less frequently.[129]

Limited financial oversight and overabundance of cash is distorting the healthcare market

Both NGO representatives in Abuja and interlocutors in the field warned that despite the persistence of polio in northern Nigeria, there is probably more money being poured into Nigeria than is necessary for eradicating polio. This overabundance of cash may be distorting the "public health market" and allowing local governments to misappropriate funds while still carrying out polio eradication programs at a minimum. The release of funds are regularly delayed, which in turn disrupts planning and implementation. It may very well be that local governments and NGOs view polio eradication as a funding mechanism rather than an actual goal.[130]

In its most extreme form, the abundance of money tied to polio eradication efforts may be providing perverse incentives. At this point, polio eradication is a full-scale, multi-million dollar industry. There are offices and NGOs that exist only because of the campaign. There are drivers, cooks, and cleaning staff and perhaps entire patronage networks who depend on the continuation of polio eradication campaigns. It is an open secret that some organizations might purposely fail to monitor their work so that polio eradication campaigns will continue. For this reason, levels of non-compliance might be inflated and households missed by immunization rounds may be over-reported, so as to ensure that funding streams continue. In this sense, there are some perverse incentives to not eradicate polio[131]

[129] Interviews in Abuja, December 2013. Interviews in northern Nigeria, January 2014.
[130] Interviews in Abuja, December 2013. Interviews in northern Nigeria, January 2014.
[131] Interviews in Abuja, December 2013. Interviews in northern Nigeria, January 2014.

Recommendations

Health care infrastructure

Improvement of overall healthcare service through polio vaccination campaigns

1. Improvement of overall healthcare services: Polio vaccination campaigns need to be part of a broader push for better governance and better health service delivery. This does not mean that immunization rounds need to be put on hold, but it does require that polio vaccination campaigns have to be embedded within efforts to bridge gaps between the government and the governed. Absent these efforts, frustrations with translate into "polio fatigue" and vaccine rejection. One option would be to provide additional healthcare services (medication for diarrhea, malaria etc.) through vaccination personal in order provide broader health care service.

2. Targeted healthtcare infrastructure improvements: For a higher impact strategy, **targeted improvements can be made of healthcare infrastructure** in communities that are distrustful of the state, though this runs the risk of exacerbating suspicions of motives, and creating new tensions between districts.

Public Opinion

Involvement of stakeholders & communication strategy

3. Assessment of public opinion on community level: Determining the public opinion on community level will be necessary in order to **review and reassess current communication strategies** and campaigns for different regions.

4. Participatory polio campaigns: Immunization programs should **continue to be participatory and involve state and local governments**, community leaders, and traditional rulers such as emirs, political leaders who are elected and religious leaders. Civil society groups, even those outside the purview of health should be mobilized. In some areas, Polio eradication is on the right trajectory. Continued efforts in sensitization should be maintained and a radical rethink of strategy is not required. The merits of polio vaccines should continue to be diffused through these formal and informal networks, such as community radio, television, pamphlets, religious ceremonies and cultural events.

Security context & scenario analysis

Setting up a network to gather information about the security situation on LGA and ward level

5. Improve security awareness in key districts: In much of northern Nigeria, but specifically Borno and Yobe states, **polio eradication needs to be placed in a security context.** Polio eradication is not a neutral enterprise. Though eradication efforts have made great strides in realizing that "being right is not enough," within the context of politics and culture, perhaps it is time to start thinking where polio eradication and public health fall within the security sector. Attacks by Boko Haram, as

haphazard and nihilistic as they seem, are not random. Local interlocutors should be found who are able to navigate this terrain and provide GPEI with real-time information.

Working with the police and the army is unlikely to yield actionable intelligence. They have their own motives and agendas and have demonstrated a stunning inability to know much about the socio-cultural terrain in which Boko Haram operates. Reaching out to JTF poses a different problem all-together, as healthcare providers are likely to be targeted if they are seen as in an extension of JTF. The global health community needs to find a way to gain real-time information about shifts in the socio-cultural terrain without "militarizing" the issue.

One avenue that should be explored is **reaching out to civil society groups, local journalist organizations and NGOs that are familiar with these dynamics**, though not necessarily healthcare specialists. Setting up a network of groups that can provide information on the political and security situation at the LGA or even ward level would go a long way in helping the polio eradication efforts forecast and plan for external shocks.

Scenario analysis and contingency plans in a crisis environment

6. **GPEI should have strong contingency plans for each LGA for how to operate in a crisis environment.** This is potentially dangerous work, but the dangers are not entirely unpredictable. For the foreseeable future, contingency plans must be put in place to deal with refugees who flow into Niger, Chad and Cameroon. They should also be in place to deal with IDP flows as a result of violence stemming from Boko Haram, and election-related violence. A "wait and see" approach will not suffice. The health community, including donors, need to be more proactive in preparing to mitigate the impact of insecurity and violence in northern Nigeria.

   The GPEI has done a good job making technical assistance and advice readily available to program implementers, but it should work to develop ways to give "strategic" advice, which would include feedback loops that would better anticipate the effects of instability, whether they stem from political or security events. **Public health professionals need to be educated on political and security issues of the areas in which they work,** perhaps seconded to other organizations, where they can be trained to be able to approach diplomats, ministries of foreign affairs, military officers, local leaders, religious leaders and a range of other actors to better understand the broader conditions in which they must operate, and to mobilize the appropriate support in the face of new or emerging challenges. Flexibility and an ability to respond to realities on the ground are essential. This means coordinating with multiple actors and requires a willingness to mix politics, public health, and diplomacy. The toolbox needs to be diversified to enable a better understanding of how insecurity effects public health.

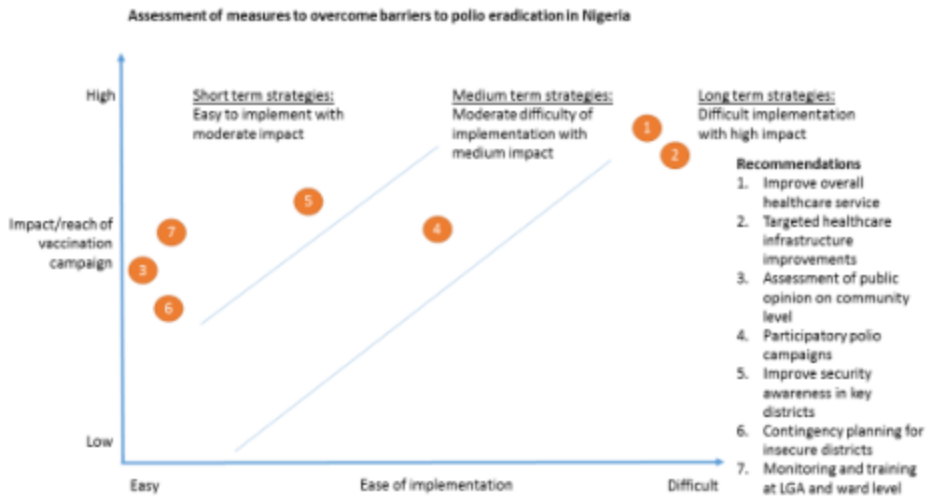
Monitoring & Feedback

Monitoring training for vaccination staff#

7. **Monitoring and training for vaccination staff: More robust monitoring needs to take place at the LGA and ward level.** This means training staff to be able to carry out monitoring activities, as well as having independent actors who can verify or "audit" the work being carried out. A cost benefit

analysis of diverting resources, time and energy toward monitoring rather than constant routine immunization rounds should be conducted. Near constant immunization rounds, or the "shotgun" approach may yield results and might eradicate polio in spite of the poor quality of the underlying public health infrastructure in northern Nigeria, but getting past the finish line is not enough, staying past the finish is the end goal.

In the graph below, the various strategies laid out have been clustered according to their likely impact on the polio eradication campaign, as well as on their ease of implementation. Ease of implementation was assessed along three criteria: cost, time and risk. In particular, the issue of risk is pertinent for those interventions seeking to have impact in Boko Haram controlled regions.



Many of the recommendations, however, should be considered as basic pre-requisites for continuing to operate in Boko Haram controlled areas of Nigeria. The tensions in these regions are escalating high, and the risks to health workers, community members and considerable.