



Doing Development Differently (DDD):
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COUNTRY DELIVERY CASE STUDY



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WHEN INSTITUTIONS WORK: NIGERIA'S EBOLA RESPONSE

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When Institutions Work: Nigeria's Ebola Response

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Abbreviations and Acronyms

AFP	Acute Flaccid Paralysis
BMGF	Bill and Melinda Gates Foundation
CDC	Centers for Disease Control (United States)
CNN	Cable News Network (United States)
DRC	Democratic Republic of Congo
DSNO	Disease Surveillance and Notification Officers (DSNOs)
EEOC	Ebola Emergency Operations Centre
EOC	Emergency Operations Centre
GPS	Global Positioning System
HIV	Human Immunodeficiency Virus
ICS	Incident Command System
IDSR	Integrated Disease Surveillance and Response
IMS	Incident Management System
LGA	Local Government Area
LSPHCB	Lagos State Primary Health Care Board
MDG	Millennium Development Goal
MSF	Médecins Sans Frontières
₦	Nigerian Naira
NCDC	Nigeria Centre for Disease Control
NFELTP	Nigeria Field Epidemiology and Laboratory Training Program
NDHS	Nigeria Demographic and Health Survey
NMA	Nigerian Medical Association
NPHCDA	National Primary Health Care Development Agency
PBF	Performance-based Financing
PHCA	Primary Health Care Agency
RBF	Results-based Financing
SIM	Subscriber Identity Module
SMS	Short Message Service
SOP	Standards of Practice
SWAT	Special Weapons and Tactics
TA	Technical Assistance
UNEP	United Nations Environment Programme
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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Executive Summary

Nigeria is a country of immense natural resources and potential, but the government's capacity to deliver public goods has generally been weak. Health sector outcomes over the last decade have been mixed, with declining infant and child mortality rates but little progress in reducing maternal mortality and continued high fertility. Childhood malnutrition has actually worsened by some measures.

It was against this backdrop that Nigeria faced the arrival within its borders of the deadly Ebola Virus Disease in July 2014. The West Africa region has been ravaged by the worst-ever outbreak of the disease, with over 20,000 recorded cases and 6,800 fatalities between March 2014 and January 2015. Despite assurances that the Nigerian government was prepared to respond to an outbreak of Ebola, the country was caught unaware and forced to mount an emergency response. There was widespread fear that this would be the start of a rapid global spread of Ebola, given Nigeria's large and mobile population, the density of the city of Lagos (where the first case was identified), past coordination problems within government, and persistent service delivery and governance challenges.

Yet despite these serious concerns, the spread of Ebola was successfully contained in Nigeria. At 40 percent, the fatality rate of Nigeria's cases was among the lowest recorded in an Ebola outbreak—half the overall case fatality rate of 80 to 90 percent recorded for the current outbreak. Nigeria's response has been celebrated widely as swift and concerted, thanks to the joint efforts of the federal government, the governments of Lagos and Rivers states, and international partners such as the World Health Organization, Médecins Sans Frontières, the United States' Centers for Disease Control and Prevention, and the United Nations Children's Fund. The World Health Organization declared Nigeria Ebola-free on October 20, 2014, just three months after the virus made its way into the country.

This successful result came as a surprise to observers given Nigeria's limited progress in improving health outcomes and service delivery over the past two decades (Loevinsohn and Dimka 2014). This case study seeks to understand why Nigeria's Ebola response was so successful despite the challenging context. The case study will focus on institutional architecture and political will, taking an exploratory qualitative approach to examine the institutional dynamics and motivations among various stakeholders involved in the country's

response. The aim is to distill lessons that may be applied to other emergency response initiatives, as well as elsewhere in the health sector and in other areas of service delivery. These goals fit within the overall aim of the *Doing Development Differently* series, which explores what works in Nigeria, how, and whether lessons can extend to other areas of development.

WHAT CAN WE LEARN FROM NIGERIA'S PAST EXPERIENCES WITH DISEASE RESPONSE AND SURVEILLANCE?

A common feature in all of Nigeria's responses to disease outbreaks, to date, is the presence of an accountability mechanism through federal and state oversight committees. In line with international recommendations, the country is shifting from reactive public health response systems that focus primarily on epidemiological interventions, to more proactive responses guided by clearly defined management strategies. This evolution has resulted in part from capacity strengthening through the Polio Eradication Initiative, but countrywide systems are still a long way from ideal and the technical resources and capacities needed to effectively implement such response systems are lacking.

Nigeria's experience in responding to a lead poisoning outbreak in the northern state of Zamfara in 2010 and 2011, for example, demonstrates how a low level of appreciation, a weak surveillance system, and consequent delays in responding to a public health emergency led to significant, longstanding environmental damage, mortality, and morbidity.

In responding to annual outbreaks of Lassa Fever, key success factors have included effective coordination, active case management, community mobilization, and evaluation of contacts and suspected cases. Many of these factors had a positive influence on Nigeria's Ebola response. On the downside, studies have identified weaknesses in emergency preparedness, poor training of medical personnel, inadequate technical capacity, fear among health workers, and lack of adequate equipment (Fisher-Hoch et al. 1995; Bassey et al. 2011; Adewuyi et al. 2009).

In the case of Nigeria's Polio Eradication Initiative, the establishment of Emergency Operations Centers (EOCs) at the national level and in five states created an institutional focal point for collaboration between

the government and its partners, facilitating data-driven decision making, operational management, and implementation of strategies. The experience of the Polio EOC's management, from startup to project management and surveillance using new technologies, was a critical driver of the operational efficiency of Nigeria's swift and successful Ebola response.

INSTITUTIONAL ARCHITECTURE OF NIGERIA'S EBOLA RESPONSE

At the outset of its response to the Ebola outbreak, drawing on its experience with the Polio EOC, the Nigerian government established an incident management center that morphed into the Ebola Emergency Operations Centre (EEOC). Led by a core management team, the EEOC formalized the involvement of federal, state, and local government actors. Reporting lines were clear from the start, and twice-daily supervision meetings allowed managers to easily and quickly identify and address implementation challenges.

Importantly, Nigeria's Ebola response was developed on the basis of pre-existing systems, taking advantage of physical and human resources already on the ground while strengthening those that were functioning less well. Development partner support was allocated strategically using the existing and functional Development Partners' Group as a platform for coordination. Moreover, local teams whose expertise had been built over weeks of assisting the response in Lagos were mobilized to support the response in Rivers State once cases were confirmed there. Some of these personnel are now among the team of over 500 Nigerian volunteers supporting other West African countries hit by this crisis.

WHAT CAN NIGERIA'S EXPERIENCE IN BATTLING EBOLA TELL US ABOUT THE FOUNDATIONS OF A SUCCESSFUL EMERGENCY RESPONSE?

Fear as a great motivator. Ebola's arrival in Nigeria incited fear and widespread panic. The disease was ravaging Liberia, Guinea, and Sierra Leone, and many doubted that the Nigerian government could mount an effective response within a complex, politically sensitive, and only partially functional institutional environment. There was a personal and individual fear due to the contagious nature of Ebola, especially in light of the devastating impact the disease had already had on other countries in the region. In particular, the fact that the index case was a senior diplomat motivated the country's elite to act. Nigeria's global reputation also seems to have been a factor, buttressed by visible changes in West Africa's investment climate and the withdrawal of expatriate staff. Within a

few days of the outbreak, Nigeria's president declared that the government would do anything possible to contain it. The government took immediate action following this announcement, re-establishing a relationship of trust and reassurance between the government and its people.

Technical leadership. Nigeria's Ebola response might have been ineffective without the technical leadership demonstrated by key health sector actors. The minister of health, for example, served as a "broker" between political and technical cadres, bringing infectious disease specialists and epidemiologists with decades of experience to the forefront of the response, and between the government and the Nigerian public, regularly giving updates on the status of the outbreak, on actions taken by the government, and on progress recorded. At the operational level, the index case in Nigeria's Ebola outbreak could have been missed, given that it presented in a private facility that did not have clear channels of communication with the public health sector. Dr. Ameyo Adadevoh demonstrated exceptional astuteness and professionalism in diagnosing Ebola and informing the relevant authorities.

Incentives for health workers. Paradoxically, the same fear that drove Nigeria's Ebola response threatened to derail it when health workers could not be mobilized. News emerging from other West African countries was revealing high infection rates among health care staff. These risks—together with ongoing (pre-outbreak) tensions between the Nigerian Medical Association and the government over low wages and mismanagement—were a strong disincentive. The EEOC responded creatively to this challenge, devising an incentive-based personnel mobilization strategy that drew on "per-shift" payment premiums and hazard pay to attract workers. This payment model is largely credited for the success of the recruitment exercise, as for some it served as a monetary match to the risk of exposure.

Operational efficiencies. With a staff of 1,800, the EEOC's task of meticulously reviewing large data inflows with minimal errors and making and executing decisions quickly required more than technical capacity. Nigeria's primary health care systems have struggled in the past with coordination and the translation of policies into practice. Despite initial funding delays, EEOC operations were executed efficiently due to innovative streamlining of procurement processes and stopgap funding from Lagos State, which had the means and could leverage potential contributors from the private sector. Also important was the fact that decision making took place at the level of the response team/unit heads and at the senior management/strategy group level.

Technical assistance. The global threat posed by Ebola underlay the international response in Nigeria.

Cooperation and coordination were greatly enhanced by technical assistance that was already in place and therefore well positioned to broker international expectations and expertise within available systems. The presence of development partners focusing solely on outbreak response encouraged local leadership, despite opposing political stances and different levels of government, to focus on EEOC efforts and work together toward a common purpose.

Data and information sharing. The use of smartphones, adopted early in the response, allowed for real-time reporting and data tracking. As a result, the data generated by the EEOC were of good quality, well organized, accessible, and analyzable. Data from the response flowed not only vertically, but also across teams, catalyzing operational efficiency. A notable example is the transfer of patients from the surveillance team to the case management team with the onset of symptoms

and upon confirmation of laboratory results. Moreover, following false rumors with tragic consequences, the EEOC learned early on the importance of proactively disseminating accurate information.

WHAT ARE THE IMPLICATIONS OF NIGERIA'S EBOLA RESPONSE FOR SERVICE DELIVERY MORE BROADLY?

This case study confirms the growing body of evidence that pockets of effectiveness exist in Nigeria. Despite the country's international reputation for governance challenges and ineffectiveness, the country is full of potential and is able to act when certain factors are in place. In this case, the fact that Ebola was blind to economic class and threatened the elite was a primary motivator for the strong institutional response. Going forward, it will be important for the Nigerian government

BOX 1: Key Conclusions for Health Sector Reform and Service Delivery Systems

Effective leadership. The unexpected policy response to the Ebola outbreak reveals strong political and technical leadership in Nigeria, which can be spurred to act if sufficiently motivated. In addition, despite systemic weaknesses, Nigeria can organize systems to be responsive and efficient. In the absence of an immediate public threat, the key to eliciting this leadership may lie in the packaging of narratives and findings on global health issues.

Timely action. The timeliness of Nigeria's Ebola response was critical to containing the spread of the disease. From an individual doctor's quick thinking and strength in the face of pressure, to the federal government's immediate declaration of a national public health emergency, the timely actions of key figures allowed Nigeria to put in place the systems needed for an effective response. This points to the importance of ownership and close ties between technical processes and government oversight.


Meaningful autonomy. Giving mid-level managers control over their operations circumvents unwieldy bureaucracy that can throttle a rapid response. It allows them to find innovative solutions and can catalyze the efficient decentralization of functions. This is consistent with the findings of performance-based financing interventions, which show that health care results are achieved not by policy makers but by technical cadres at operational levels, particularly when they are granted autonomy.

Well-designed incentives. Incentives can help motivate health care workers, but they must be packaged and offered in accordance with the broader economic, political, sectoral, and cultural context. Understanding situations where financial incentives can work alone and those where they need to be integrated with other nonfinancial incentives is central to the success of any such strategy.

Existing assets. Identifying existing assets and resources—whether organizational, infrastructural, human, or fiscal—and quickly harnessing these techniques, technologies, and processes can yield rapid results while ensuring policy continuity.

Data-driven decisions. Data should not merely be generated, but utilized. Making information available, if properly generated and adequately used, fosters the potential for real-time learning and application of lessons, which could prevent catastrophic mistakes and guide corrective actions.

Relevant technical assistance. Technical assistance must be timely and provided by people who have an understanding of local systems, organizational culture, and sectoral and political dynamics. This is best achieved in collaboration with competent and highly motivated local experts.



to remain vigilant, building on the effective platform provided by the EEOC to strengthen its disease surveillance systems and continue efforts to ensure strong technical leadership and regular communication with the public.

Strong, passionate leadership, coupled with first-class technical capacity, are critical for effective delivery in Nigeria. Ensuring that such teams have clear roles and responsibilities, strong internal communication, and freedom from political interference is also important.

A proactive communication strategy is required to build a broader coalition of support, and demand-side actors such as nongovernmental organizations play a helpful role. Delivery in this case was enhanced by the existence of systems and practices, although in a hybrid arrangement in which passionate individuals were “hired in” to deliver the response when official health workers were on strike or felt too threatened. Box 1 lays out several important conclusions from this case study that apply to health sector reform and service delivery more broadly.

The Development Challenge: An Unprecedented Outbreak with Worldwide Implications

OVERVIEW

Over the past year, the world has experienced its worst-ever outbreak of the Ebola Virus Disease, with over 20,000 recorded cases and 6,800 fatalities between March 2014 and January 2015. At the epicenter of this outbreak, in the West African countries of Liberia, Guinea, and Sierra Leone, the unprecedented magnitude of the epidemic has proved overwhelming to both governments and international agencies. The disease has also spread to Senegal, Nigeria, Europe, and the United States, albeit with much more limited impact. The outbreak is beginning to abate, and the World Health Organization (WHO) indicated that the number of confirmed cases reported in the first week of May 2015 is at its lowest level in a year (WHO 2015).

The spread of Ebola was successfully contained in Nigeria, despite concerns about existing gaps in governance and health service delivery. The WHO declared Nigeria Ebola-free on October 20, 2014, just three months after the virus made its way into the country.¹ Nigeria's Ebola response has been widely celebrated as swift and concerted, thanks to the joint efforts of the Federal Government of Nigeria, the governments of Lagos and Rivers states, and international partners such as the WHO, Médecins Sans Frontières (MSF), the United States' Centers for Disease Control and Prevention (CDC), and the United Nations Children's Fund (UNICEF).

This successful result came as a surprise to observers given Nigeria's limited progress in improving health outcomes and service delivery over the past two decades (Loevinsohn and Dimka 2014). A closer look at the underlying health system reveals fragmentation between federal, state, and local government levels. The Federal Ministry of Health encompasses over 200 agencies, many of which are defunct while others have overlapping functions. Uneke et al. (2007) trace the poor

state of Nigeria's health system to a lack of institutional organization, as demonstrated by the absence until five or so years ago of proper state-level coordination bodies for primary health care, as well as by limited stewardship and financing. He argues that these have been compounded by other socioeconomic and political factors, including out-of-pocket expenditures for health and lack of translation of policies into practice. Similarly, assessments conducted by the World Bank (2012, 2014b) reveal a system burdened by weak governance and poor accountability for results. Although 80 percent of recurrent spending in the health sector is directed toward health worker salaries, health worker performance remains poor (Uneke et al. 2007, World Bank 2014b). Reasons for this underperformance include underfunded, unsupervised health facilities with poor infrastructure, chronic drug stock-outs, and inadequate ratios of skilled staff; poor human resources planning and management practices and structures; lack of professional autonomy; long working hours; poor access to needed supplies, tools, and information; inadequate career paths; and limited or no access to professional development opportunities (Uneke et al. 2007). Years of poor service quality have engendered in the Nigerian public a deep mistrust of the health system and its service providers, leading to underutilization of services. As a result of these challenges, Nigeria's health sector is often unable to deliver expected results.

Given this context, this case study seeks to understand the factors behind Nigeria's successful Ebola response, with a focus on the institutional architecture and political will, and to distill lessons that may be applied to other emergency response initiatives, as well as elsewhere in the health sector and in other areas of service delivery. These goals fit within the overall aim of the *Doing Development Differently* series, which explores what works in Nigeria, how, and whether lessons can extend to other areas of development.

1. To be declared Ebola-free, the country needed to go 42 days—a period double the incubation period—with no new cases, verify that it actively sought out all possible contacts, and show negative test results for any suspected cases.

Although the World Bank stood ready to provide assistance with Nigeria's Ebola response if requested, and was proactive in seeking out a useful role if required, it was not directly involved in the events described in this case study. This perspective offers a useful opportunity to step back and look at the large-scale institutional and organizational factors that contributed to Nigeria's accomplishments in this area.

CASE STUDY ASSESSMENT FRAMEWORK

This case study takes an exploratory qualitative approach to understanding the institutional dynamics and motivations among various stakeholders involved in Nigeria's Ebola response. The work began with a desk review of journal and media articles and other publications, followed by interviews with key stakeholders. Interviewees included officials of the Ebola Emergency Operations Centre (EEOC), within the Nigeria Centre for Disease Control (NCDC); the Polio Emergency Operations Centre (EOC); the Lagos State Government;

the WHO; and the CDC. Interviews were also conducted with representatives of civil society, including media and risk management consultants and other stakeholders who were not directly involved in the emergency response.

Interview notes have been supplemented with anecdotes harvested from electronic, online, and print media, based on themes emerging from the literature and interviews. Key findings presented in this case study are substantiated with experiences from other health system interventions by the Nigerian government.

Limitations of this study include the small number of interviews and lack of access to internal documentation from the Ebola response. Depth of analysis was sacrificed in favor of completing the case study rapidly so that knowledge about Nigeria's successful response could be shared quickly, informing its transition-phase strategy and supporting the preparation of World Bank projects to assist with the Ebola response in Guinea, Liberia, and Sierra Leone.

The Delivery Challenge: Bringing Existing Government Resources to Bear in Response to an Urgent Crisis

THE EBOLA CRISIS IN WEST AFRICA

Evidence suggests that the current Ebola outbreak began in a rural area of Guinea in December 2013. The outbreak was officially confirmed early in 2014, at which time it seemed to remain within the borders of Liberia, Sierra Leone, and Guinea. The outbreak spread fairly quickly to urban and semi-urban areas.

In April 2014, as Liberia sought to contain the outbreak, the Nigerian government stated that it was fully prepared to respond to any outbreak of the disease within Nigeria's borders, including having available vaccines against Ebola. However, when a Liberian diplomat who had arrived in Nigeria on July 20, 2014, was diagnosed with Ebola, Nigeria was caught unaware and forced to set an emergency response in motion. Twenty people became infected, with eight fatalities reported. At 40 percent, this case fatality rate is one of the lowest recorded in an Ebola outbreak. The current regional outbreak, by contrast, reported an overall case fatality rate of 80 to 90 percent.

Ebola continued to ravage Guinea, Liberia, and Sierra Leone—countries whose infrastructure and health systems have been weakened by decades of civil war (Liberia and Sierra Leone) and political upheaval (Guinea). Coupled with an emerging health worker crisis, following infection and deaths among many health workers in the region, the Ebola outbreak has revealed massive governance and systemic challenges in the affected countries. Despite Nigeria's more robust health system, fears trailed the confirmation of the virus in the country, owing to concerns over the country's large population, the density of the city of Lagos (where the first case was identified), and past coordination problems within the Nigerian government.

PUBLIC HEALTH SURVEILLANCE AND EMERGENCY RESPONSE SYSTEMS IN AFRICA

The CDC defines surveillance as “a watchful, vigilant approach to information gathering that serves to improve or maintain the health of the population” (WHO and CDC 2001, 1). The use of epidemiological methods for surveillance is designed to equip “district and local health teams to set priorities, plan interventions, mobilize and allocate resources and predict or provide early detection of outbreaks” (WHO and CDC 2001, 1). This requires continuous and systematic collection, analysis, and interpretation of health data from credible sources and dissemination of information to those who need to know (Phalkey et al. 2013; Thacker and Berkelman 1988).

The first integrated disease surveillance guidelines for the Africa region were published by the WHO and CDC in 2001 to help African countries develop comprehensive surveillance systems that would be well positioned and equipped at all levels of health care service delivery to identify priority diseases, periodically analyze surveillance data, and identify and investigate public health threats. The WHO and CDC revised these technical guidelines in 2010 to incorporate key disease surveillance aspects of the International Health Regulations of 2005 and heighten awareness of the importance and efficient use of core national capacities for surveillance, reporting, notification, and verification. The revised guidelines also sought to account for important developments in the previous decade (2001–2010), including the emergence of new diseases and evolving social and economic contexts.

The 2010 guidelines identified large variations in the implementation of the integrated disease surveillance

and response (IDSR) strategy among the 46 Sub-Saharan African countries. Gaps included the absence of district-level data staff in 30 percent of the countries, the lack of epidemic management committees in 80 percent of the districts, the absence of rapid response teams in 50 percent of the districts, a lack of logistics and communication capacities in most countries, and a lack of consistency in the use of monitoring indicators (WHO and CDC 2010). The guidelines emphasized the need for community surveillance. Similarly, St. Louis (2012) identified elements critical to a properly functioning surveillance system, including leadership, prioritization of diseases, standardization, interoperability, innovation, and use of technologies and partnerships.

The response portion of a surveillance system requires that many of the aforementioned resources be put in place, including convening public health management committees, allocating adequate resources to response teams, and ensuring regular communications. The CDC recommends the use of an Incident Command System (ICS), similar to that used for military operations, that operates according to an effective plan and chain of command to respond to public health emergencies.

An Emergency Operations Center often operates using an ICS, and provides information, tools, and a management system during an emergency (WHO 2013). The EOC adapts a “war room” approach, driven by accountability to management, the need to deliver to avoid lags in team operations, and strict adherence to work plans and timelines (Shuaib et al. 2014). In December 2013, the WHO undertook a systematic review to elicit country experiences and “best practices” in establishing and managing EOCs, especially as there are no universally agreed international guidelines on the structure, organization, function, and monitoring of EOCs. Emerging lessons from this review include: (i) formalizing coordination processes; (ii) streamlining operating parties for optimal use of resources; (iii) microplanning, and continuously re-evaluating such plans even when there is no outbreak; and (iv) detailed documentation, including job and task descriptions and Standards of Practice (SOPs). In addition, the review highlighted the critical importance of staffing and emphasized that training to recognize threats and use communications systems should be based largely on evidence generated from thorough assessments. Other components of a functional EOC include strong data collection, review, and analysis, as well as taking advantage of data management expertise that is available before EOC activation for before, during, and after the response. A good EOC is one that can respond to different public health emergencies while maintaining core functions in planning, finance, administration, and logistics.

DISEASE RESPONSES AND SURVEILLANCE IN NIGERIA: PAST EXPERIENCES

Nigeria has learned from experience in managing several disease outbreaks in the past, including Lassa Fever and lead poisoning, as well as from its efforts to eradicate polio. The institutional architecture, core operations management, and overall success of these responses differed. These outbreaks attracted varying degrees of attention from federal and state leadership, and from the international community, resulting in variations in resource allocation, coordination, and response rates. Case studies of local government emergency preparedness and capabilities in Local Government Areas (LGAs) in Kaduna State revealed that the local government met fewer than 50 percent of the criteria laid out in the National Technical Guidelines for IDSR (Abubakar et al. 2010, 2013). This assessment points to a system that would be unable to respond to any public health emergency of significant magnitude or, at best, able to mount only a partial response.

This section reviews Nigeria’s experiences in disease outbreak response, paying particular attention to governance and systemic issues and comparing these experiences to what would be considered “good practice” responses by international standards of disease control.

A common feature in all of Nigeria’s responses to disease outbreaks, to date, is the presence of an accountability mechanism through federal and state oversight committees. Overall, it would appear that, in line with international recommendations, the country is shifting from reactive public health response systems that focus primarily on epidemiological interventions, to more proactive responses guided by clearly defined management strategies. This evolution has resulted partly from capacity strengthening through the Polio Eradication Initiative, although countrywide systems are still a long way from ideal. On the downside, there is a dearth of technical resources and capacities needed to implement such response systems effectively. For example, technical capacity for laboratory diagnoses and logistics remains weak due to the lack of equipment and trained personnel (Akpan 2011). Similarly, Victor (2014) revealed that, although health workers possessed a general knowledge of surveillance indicators in the Health Management Information System, they did not accord them much importance nor did they have the computational or mathematical skills needed to analyze them.

Lead Poisoning Outbreak Response

The United Nations Environment Programme (UNEP) describes the lead poisoning outbreak during 2010 and 2011 in Zamfara State, in northern Nigeria, as a “neglected and underfunded environment and public health

emergency” (UNEP 2011). Illegal gold mining by locals resulted in elevated levels of lead in the environment. Field surveys conducted by UNEP and the United Nations Office for Humanitarian Affairs reported lead quantities over 10 times above the limit in well water, over 150 times above the limit in soil, and over 500 times the limit in the air—quantities that could be found in the air as well as dust on miners’ bodies, animals, and farm produce. These unusually high levels of lead resulted in countless fatalities, the exact number of which is unknown but includes 400 children, and left over 10,000 people at acute risk of death or severe illness (Saleh 2011).

Human Rights Watch described Nigeria’s response to the lead poisoning outbreak as “the latest testament to the Nigerian government’s failure to make the health of its citizens a priority,” pointing to weaknesses in governance and in investments in public health. This statement most likely referred to the government’s delayed response to an early warning report from MSF, citing the growing number of deaths among children who showed similar symptoms but did not respond to antimalarials or antibiotics. Eventually, a team comprising the Federal Ministry of Health, the CDC, the WHO, and the Nigeria Field Epidemiology and Laboratory Training Program (NFELTP) joined MSF and the Zamfara State Government to carry out investigations. This resulted in the establishment of a National and Zamfara State Task Force. Funding support was received in the form of a grant from the United Nations Central Emergency Fund. Blacksmith Terragraphics were responsible for environmental remediation.

The overall response was multisectoral, with core elements spanning the public health and mining sectors. Policy responses included a move toward regulating mining activities and the adoption of case management and treatment protocols. Operational interventions included training health care workers on accurate diagnoses, strengthening surveillance systems for active case identification, and establishing a referral system.

Despite some of the successes recorded, challenges remained in coordinating clinical therapy with environmental remediation, and in managing logistics and supplies. Large numbers of exposed persons were not able to receive chelation therapy, and discharged patients often returned to unremediated communities. Compliance with new mining regulations was low, exacerbated by a lack of enforcement. Surveillance activities were restricted by inadequate logistics, insufficient funding, and security challenges.

The lead poisoning response in northern Nigeria demonstrates how a low level of appreciation, a weak surveillance system, and consequent delays in responding to a public health emergency led to significant, longstanding environmental damage, mortality, and

morbidity. This experience stands in stark contrast with the country’s Ebola response, discussed below.

Lassa Fever

Lassa Fever is endemic in West Africa and responsible for the death of 20,000 people per year in the region—more than twice the current regional death toll from Ebola. Nigeria experiences annual outbreaks of Lassa Fever, including in Oyo State at the time this case study was conducted during September and October 2014.

One case study of the 2012 outbreak response revealed major success factors as well as critical gaps in the response system. Due to the nosocomial nature of that outbreak, a multidisciplinary hospital Lassa Fever management committee was given operational responsibility for the outbreak response, with technical oversight from national and state task forces.

Effective coordination, active case management, community mobilization, and evaluation of contacts and suspected cases have been identified as critical elements in successful responses to Lassa Fever in Nigeria. On the downside, studies have identified weaknesses in emergency preparedness, poor training of medical personnel, inadequate technical capacity (especially in laboratory functions), fear among health workers, and lack of adequate equipment (Fisher-Hoch et al. 1995; Bassey et al. 2011; Adewuyi et al. 2009).

Fisher-Hoch et al. (1995) likened Nigeria’s 1989 Lassa Fever response to that of the Ebola outbreak in Zaire (now the Democratic Republic of Congo, DRC) in 1995. In both Nigeria and the DRC, public attention to the disease arose only after its introduction to poorly functioning health facilities resulted in its proliferation and subsequent infection of health workers. Nearly two decades later, the region still struggles with some of these challenges. One salient challenge has been the inability and insufficiency of equipment and expertise to adequately diagnose Lassa Fever. Nigeria has two diagnostic centers, both based in Edo State. Yet the disease tends to be dispersed geographically, and prior outbreaks have involved 26 of Nigeria’s 36 states as well as the Federal Capital Territory (Guardian News Nigeria 2014).

With the onset of the Lassa Fever season, an expert warned of a possible “hidden disaster,” citing concerns that the regional shift in focus to Ebola may come at the expense of the response to Lassa Fever. Ebola has claimed the lives of many health workers, some of whom were also experts on infectious diseases more broadly. This has certainly been the case in Sierra Leone, where many of the staff of an infectious diseases faculty died in the current Ebola outbreak. With insufficient technical capacity, one disease may be misdiagnosed

for the other. It is reported that some organizations have placed restrictions on travel for non-Ebola purposes, preventing the deployment of a group of experts who were to provide technical assistance during the region's Lassa Fever epidemic season, at a time when local health systems and human resources are overwhelmed with the Ebola crisis. On the upside, however, experts believe that the capacity being built as a result of the Ebola crisis will strengthen early warning systems for other hemorrhagic fevers (Ruz 2014).

Nigeria's experience in combating Lassa Fever shares some positive influencing factors with the Ebola response—namely strong coordination, active surveillance, and community involvement, discussed in depth in subsequent sections.

Polio Eradication Initiative: Emergency Operations Centre

In October 2012, with funding from the Bill and Melinda Gates Foundation (BMGF) and support from UNICEF, WHO, CDC, Rotary, and eHealth Africa, Nigerian national and state task forces set up a national EOC and five state-level EOCs in high-risk states to oversee the implementation of the Polio Eradication Initiative. The EOCs serve as the operational management unit, providing technical direction for the country's overall response to polio under policy guidance from the federal government. The EOCs are part of a larger polio response ecosystem that includes the Presidential Task Force on Polio Eradication, the National Primary Health Care Development Agency (NPHCDA), the Northern Traditional Leaders Committee on Primary Health Care, and the Nigerian Governors' Forum.

The EOCs provide the setting from which government and partners work. Co-location offers the convenience of proximity for planning, decision making, and implementation of strategies (NPHCDA 2013). Among the EOC's key achievements in 2013, the Nigerian government cites the coordination of inputs, strong implementation drive, and close monitoring.

Decision making at the EOC is data-driven, identifying critical gaps in programming and implementing strategies required to address them. The EOC management team includes action-oriented national authorities on polio eradication from various government agencies, working alongside technical experts from development partner organizations. EOC management reports to the executive director of the NPHCDA and to the minister of health on a weekly basis. The EOCs are also responsible for developing an accountability framework for stakeholders at all levels and for providing oversight and guidance in

achieving its objectives by reinforcing a “sanctions and rewards” system.

EOC operations are underpinned by a Management Support Team that comprises local and international experts and is involved in microplanning using tally analysis sheets and walk-throughs. Teams are equipped with these operational plans for technical oversight and supervision, which are informed by analysis of performance data, even at lower levels, and subsequent development of strategies. Health teams work with the Outbreak Response SOPs, which have been revised and disseminated once since the EOCs were established.

Prior to the establishment of the EOCs, Acute Flaccid Paralysis (AFP) surveillance was carried out using local government structures. District Surveillance Nodal Officers (DSNOs) were responsible for surveillance, with oversight from the LGA and funding from the local government and the WHO. A review of the AFP system identified the paucity of adequate data and surveillance documentation needed to analyze the performance of reporting sites. AFP surveillance was laden with late reporting and subsequently delayed classification by the expert committee (Bassey et al. 2011). A WHO report recommended that DSNOs be under the supervision of government and WHO structures at the state level to ensure effective coordination of supervision.

Nigeria's Polio EOC is significantly more advanced and, with polio eradication, has proven to be more effective than the country's surveillance system. It does not operate completely without the system, however, and pulls together financial and technical resources from various sources for its work. This has set a firm foundation for the Ebola response discussed below.

THE POLITICAL ECONOMY OF REFORM, DELIVERY, AND POCKETS OF EFFECTIVENESS IN NIGERIA

In addition to the Nigerian health sector's institutional formation and its previous experience in crisis management, a third relevant contextual factor that frames the Ebola response relates to Nigeria's public sector delivery capacity. It is common knowledge that the capacity of the state to deliver public goods has generally been weak, and that Nigeria—a country of immense natural resources and potential—is unlikely to meet many of the Millennium Development Goals (MDGs).

In the health sector, specifically, outcomes in Nigeria over the last decade have been mixed. Data from the last

TABLE 1: Continuing Challenges in Meeting Nigeria's Health Sector MDGs

Indicator	2003	2008	2013
Infant mortality rate (per 1,000 live births)	100	75	69
Under-5 mortality rate (per 1,000 live births)	201	157	128
Maternal mortality ratio (per 100,000 live births)	800	545	576
Total fertility rate (number of children per woman)	5.7	5.7	5.5
Childhood malnutrition ^{a/}			
Stunting (% children under 5)	42	41	37
Wasting (% children under 5)	11	14	18
Underweight (% children under 5)	24	23	29

a/ UNICEF defines (i) underweight as moderate and severe, moderate being below minus two standard deviations from median weight-for-age of reference population and severe below minus three standard deviations from median weight-for-age of reference population; (ii) wasting as moderate and severe, below minus two standard deviations from median weight-for-height of reference population; and (iii) stunting as moderate and severe, below minus two standard deviations from median height-for-age of reference population. See http://www.unicef.org/infobycountry/stats_popup2.html.

Sources: Federal Republic of Nigeria, NDHS 2003, 2008, 2013; maternal mortality estimate for 2003 from UN Maternal Mortality Estimation Inter-Agency Group.

three Nigeria Demographic and Health Surveys (NDHS)² demonstrate a 36 percent decline in the under-5 mortality rate and a 31 percent decline in the infant mortality rate during this period (Table 1). The country is still not on track to achieve MDG4 on reducing child mortality, however. There has been almost no progress on MDG5 on reducing maternal mortality, and fertility remains stubbornly high. Childhood malnutrition has actually worsened by some measures (low weight-for-age has increased by 21 percent, and wasting by 64 percent) and improved only modestly by others (with stunting, or low height-for-age, dropping by 12 percent).


Nigeria's mixed performance—in the health sector and beyond—has led to a deterioration of the social contract between citizens and public authorities at all levels. In many parts of the country, basic rights such as peace, order, and justice are not guaranteed. Nigerians' trust in decision makers and representatives is low in general, and trust levels decline along the delivery chain from the federal-level government down to the local government. LGAs, the frontline service providers, are perceived to be the least trustworthy and credible of public agencies (Afrobarometer 2006, 2008). At the same time, Nigeria is often referred to as a centralized

petro-state (Soares de Oliveria 2007), and its dependence on oil has diminished the need to re-enforce a social contract through public taxation in exchange for service delivery. This dependence has contributed to the rapid growth of centralized power through forms of political decentralization, fragmentation, and rivalry.

Despite compelling incentives and resilient structures that are deeply embedded in Nigeria's history and culture, and that generally impede improved developmental performance (Lewis and Watts 2015b), Nigeria has nonetheless periodically experienced episodes of significant reform and pockets of effectiveness that defy this context. Outsiders who work on Nigeria know it to be a complex country with strong entrepreneurial forces and capabilities that allow, under some conditions, the emergence of reforms, institutional change, and, ultimately, delivery.

A series of case studies commissioned by the World Bank to better understand why some reform initiatives move forward while others stall suggest that sequencing, establishing credibility early on, and creating a broader constituency for reform are critical features of any delivery process in Nigeria (Lewis and Watts 2015b).

2. The use of NDHS data, collected by the National Population Commission, allows for a consistent methodology over time and facilitates cross-country comparisons. The data are also recent.



Credibility problems loom large in the initial stages, given embedded incentives and structures, making decisive early actions essential for establishing new directions. Shifting constituencies create both opportunities and difficulties for delivery, making communication, mobilization of support, and elaboration of strategies to deal with different audiences critical.

Leadership is key in strong presidential systems like Nigeria, but it is not enough. It is important to form strong technical teams that can be isolated from political interference, allowed to perform, and held to account for results. Managers encounter strategic challenges in marginalizing or diluting opposition, mobilizing

beneficiaries, and engaging popular groups in their agendas. Demand-side actors are rarely responsible for initiating reforms in Nigeria but have played an important role in supporting them and keeping them on track. Building inclusive coalitions and using information and tactical skills to “crowd people in” is key to sustaining support. The role of international technical assistance in supporting new forms of delivery or reform suggests that solutions need to be well tailored to the local context and built on the basis of relationships of trust and local credibility. Many of these lessons from the broader literature on innovations and reform in Nigeria are confirmed by this case study, as discussed in the following sections.

Institutional Architecture of Nigeria's Ebola Response

ORGANIZATIONAL STRUCTURE OF THE RESPONSE

At the outset of the response, an Ebola Incident Management Centre staffed by officials from the Lagos State Primary Health Care Board (LSPHCB) and the NCDC managed Nigeria's Ebola response. This structure included an incident manager, who is the technical head of primary health care systems in Lagos State. This system relied on traditional IDSR, streamlined into primary health care structures. The Ebola Incident Management Centre quickly morphed into an Ebola Emergency Operations Centre, with structures based on an incident management system (IMS) nomenclature.

The EEOC was led by a core management team that reported to the NCDC, the minister of health, and the president, and comprised a 1,800-person team performing varying functions. The core management team included both Nigerian and foreign-trained public health physicians and particularly epidemiologists, all serving in executive capacities within the federal and Lagos State governments.

The EEOC formalized the involvement of federal, state, and local government actors, many of whom had in some way attempted to initiate response activities at various levels and scales—particularly Lagos State, with initial support from the CDC and WHO. International experts from partner organizations with the requisite expertise (such as the CDC, WHO, UNICEF, and MSF) were seeded within the response teams. For instance, the incident manager at the EEOC is part of the senior management of the Polio EOC. A senior official within the LSPHCB occupied the deputy incident manager position and headed the Incident Management Centre prior to establishment of the EEOC. Operational teams included volunteers and civil servants from the Lagos State Ministry of Health, LSPHCB, LGA Primary Health Care Authorities, Port Health Services, and NFEITP.

The EEOC follows a classic hierarchical organizational structure, with second-level functional organization (Figure 1). Specialist response teams were established, each with a designated team leader. Team functions included surveillance, case management, laboratory service, social mobilization, coordination, and point-of-entry response.

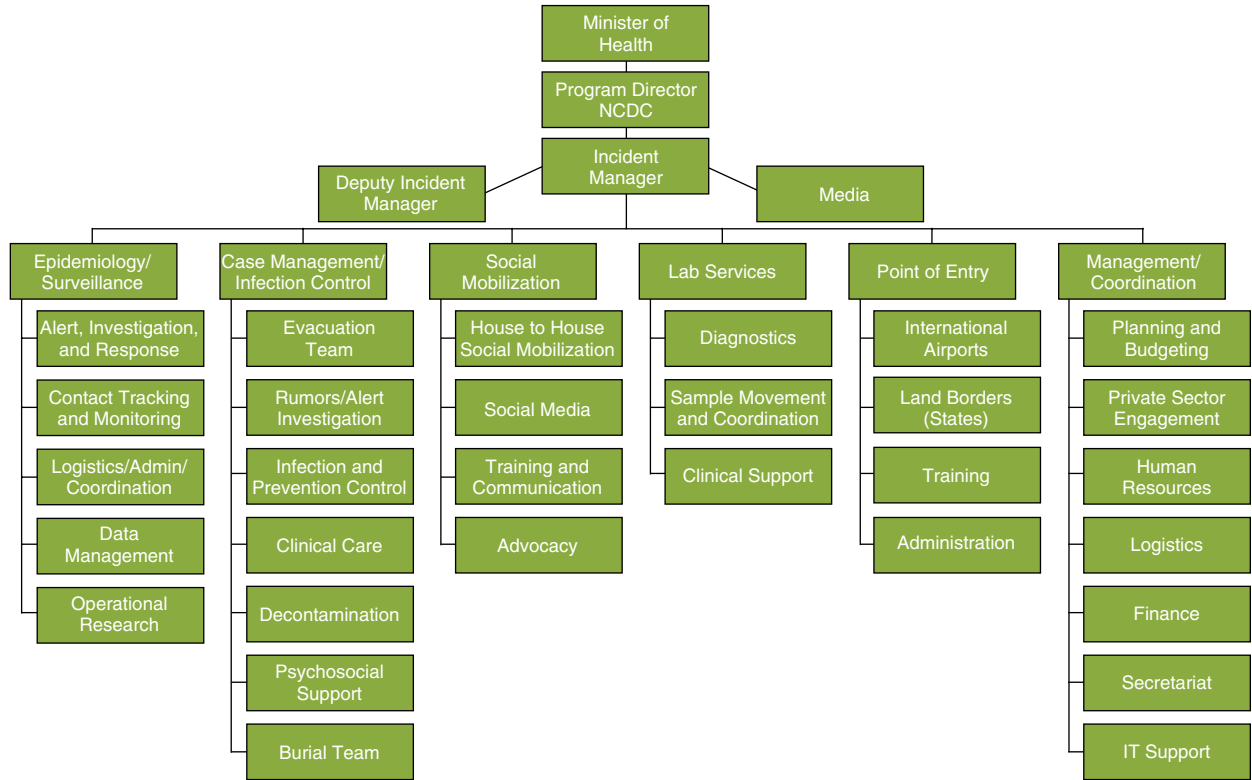
The Senior Strategy Group, comprising several development partners and senior government officials from the Ministry of Health and NCDC, oversaw EEOC management. A Presidential Task Force comprising 18 scientists, senior public officials (including the ministers of finance and health), and civil society leaders also played an oversight role, particularly with regard to the allocation and release of funds from the federal government for the response. Several states established state-level task forces as part of their preparedness efforts.

INFORMATION FOR DECISION MAKING AND COMMUNICATION: CLOSE SUPERVISION, MID-COURSE ADAPTATIONS, AND BRINGING THE PUBLIC ALONG

Data Flow

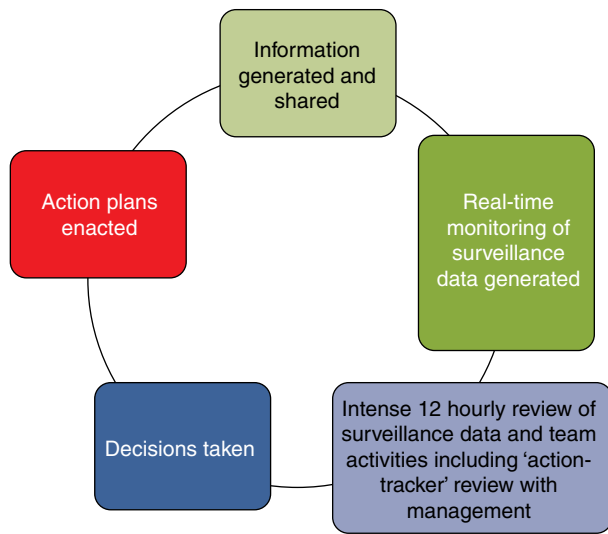
Internally, the EEOC established clear reporting lines within teams as well as between team leaders and management (Figure 2). The surveillance and contact tracing teams, comprising over 150 people, were responsible for field collection of primary data. The teams conducted over 18,500 household visits in two months, meticulously checking temperatures of primary and secondary contacts. Contact tracing data were generated during home visits using surveillance questionnaires and tablets with geolocation information and reported again during supervision meetings. The surveillance team concurrently carried out rapid operational research to inform social mobilization strategies and the content of prevention and control messages. Supervision meetings took place every 12 hours, including managers' review of operational data and teams' "action trackers." This allowed managers to easily identify and address areas of underperformance or major implementation challenges. For instance, when a few members of the surveillance team misreported temperatures of contacts, owing perhaps to fatigue given the sheer number of homes to visit, geolocation data were used to verify where they were at the time of reporting and to initiate corrective action for off-site reporting. Data sharing took place among teams, particularly those responsible for surveillance, contact tracing, and case management. The teams worked independently but in tandem to ensure cross-reporting and transfer of contacts confirmed to be positive for Ebola.

FIGURE 1: Organizational Structure of the EEOC



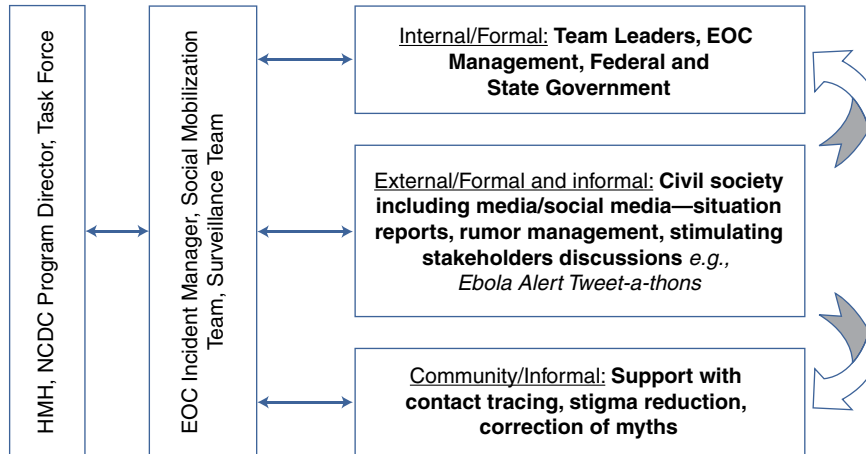
Source: Shuaib et al. 2014.

FIGURE 2: Data and Decision-making Cycle



Decision-making authority lay at various levels, depending on the activity, and was guided by clear descriptions of jobs, tasks, and mandates. For example, the head of contact tracing was able to make many technical decisions on behalf of the contact tracing team at the EEOC and make financial decisions regarding the organization’s logistical contributions to EEOC operations. Technical issues were reported at the end of the day, and issues requiring senior management approval were reviewed and approved at this meeting. Decision-making authority for implementation plans, resource requirements, staffing acquisition, and training rested with team leaders, with oversight from the management team. Overall financial decisions regarding the use of federal government funds—including on procurement, disbursement, and stipends or premiums paid to field workers—lay with senior management, however. In certain situations, decisions were taken based on pre-existing information. For instance, when vehicles were required for surveillance activities, vendors with pre-existing relationships with the government were called upon to supply these, even in the absence of disbursements. This enabled the team to rapidly procure items that were critical to operations.

FIGURE 3: Flow of Information to and from the EEOC



The Senior Strategy Group was responsible for decisions regarding the overall strategic direction of the response.

International technical experts provided close support to the head of each specialist unit. While there was country ownership of the response execution, development partners were key players in determining the technical approaches employed by teams (see below for more on aid and technical assistance). Teams used terms of reference to guide their activities but had some degree of autonomy over microplanning and implementation. Each team used the IDSR standard reporting forms at the outset. Instituting the IMS introduced a modified, programmed set of reporting forms. Eight different tools were used for reporting.

Although reporting was initially paper-based, the forms were subsequently programmed into smartphones.³ Personnel went through extensive training, going through each of the forms and questions on the devices as a group. Due to the urgent need to start collecting data, the information and communications technology and data management support personnel modified and reprogrammed the tools based on field reports, any faulty questions, and review of reported data. Digitizing the forms meant that there would be no missing variables in the data, allowing for 100 percent completeness in reporting. The GPS element of the phones not only facilitated real-time reporting, but also allowed the manager to maintain better control over inventory, since specific phones were linked to specific members of the team. When phones were off or reporting from

alternative locations, this could be picked up. Team members reported community and facility information to team leads. Team leads reported to the incident manager. The incident manager, deputy incident manager, and other members of senior management reviewed team reports jointly.

External Communications: Creating Awareness and Buy-in

The Ebola Emergency Operations Centre used various channels for external communications (Figure 3). The EEOC communicated with the federal government, including the minister of health and the presidency (through the minister of health). The EEOC also communicated daily with the media through its media engagement team. The management of the EEOC engaged in daily press briefings to ensure adequate information management and preclude widespread dissemination of rumors. Shortly after the confirmation of the index case, there was a ramp-up of television and radio jingles, public shows of hand washing and use of sanitizers by key societal figures such as the president and Lagos State governor, and circulation of a wide variety of information and educational materials. Civil society also played an important role in reshaping the Ebola narrative. For instance, a civil society organization worked with the government to staff the Ebola Alert helpline and coordinate social media engagements with health sector stakeholders and the public via its twitter handle @EbolaAlertNG. These social media platforms also provided an avenue for information from the public to reach the EEOC and the federal government.

3. The smartphones, SIM cards, and Internet data plans were donated by Etisalat telecommunications company as part of the private sector contribution to the response.

BUILDING ON AND COMPLEMENTING PRE-EXISTING SYSTEMS

Harnessing Public Health Assets

The Ebola response was not established *tabula rasa*, but was instead developed on the basis of pre-existing systems that were purposively, rather than systematically, identified (Figure 4). Although there was no clear inventory or stocktaking prior to the response, *ad hoc* identification of public health structures by government officials enabled the EEOC to optimize existing physical and human resources. Shuaib et al. (2014) propose that to have rapidly established an operation as complex as this, the collective harnessing of all existing assets, combined with the establishment of an IMS, jointly take credit for the success of the response. Assets with different levels of functionality, ranging from physical infrastructure, such as the Infectious Diseases Hospital in Yaba, to human resources in the Nfeltp, all played key roles in the response. Most notably, the experience of the Polio EOC management, from startup to project management and surveillance using new technologies, was brought to bear in the Ebola response and was a critical driver of the operational efficiency that resulted in success.

Use of pre-existing systems presented an opportunity to strengthen those that had previously been neglected or were poorly functional. For instance, referrals for Lassa Fever testing increased considerably during the Ebola crisis due to mix-ups in the symptoms. Similarly, LGA Epidemic Management Committees and Port Health

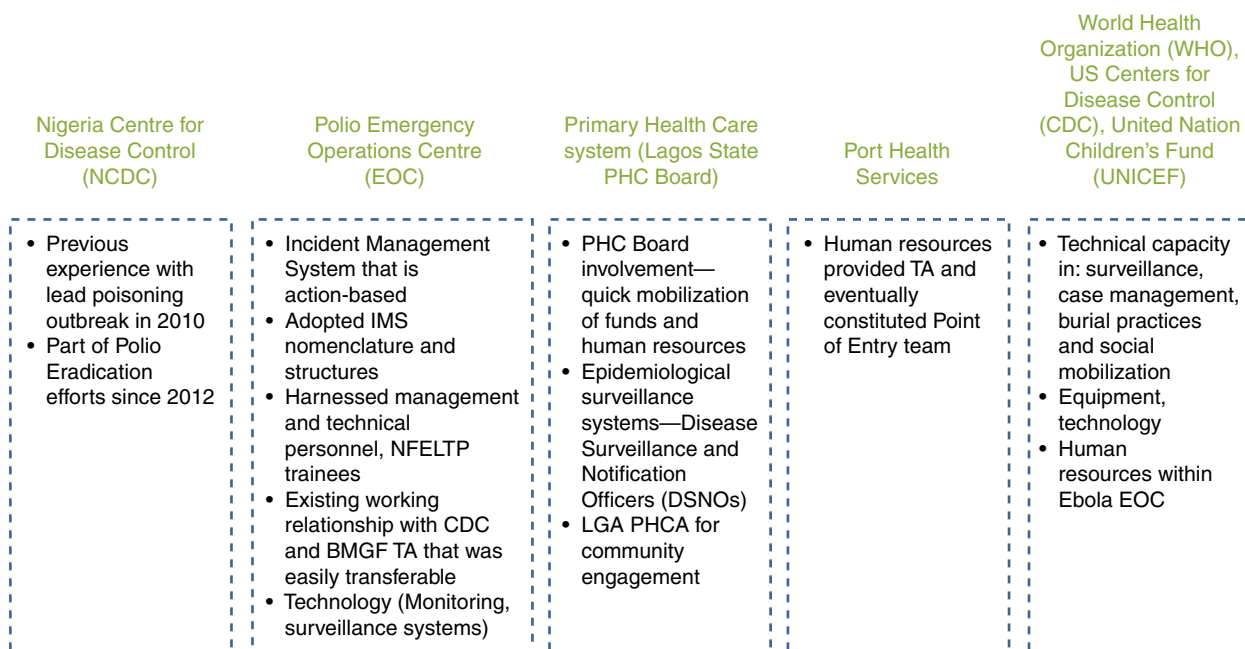
Services gained a new level of functionality through the flow of resources, training, and experience gained from the Ebola response. For example, Port Health Services did not have functional ambulances, a health response desk, or clinics at the airport prior to the response and subsequently acquired five ambulances, a desk at each of Nigeria's two largest airports, and costed plans for the establishment of airport clinics. Also, the Federal Airports Authority of Nigeria's longstanding request to recruit human resources as part of its reforms was approved immediately during the response; over 400 environmental health officers were recruited to ensure a critical mass of such expertise at the country's borders.

Technology Can Greatly Enhance Processes

As noted above, EEOC systems moved quickly from paper-based to digital forms of surveillance and reporting. The EEOC adopted the use of operational dashboards that reported site data in real time. These dashboards took the form of large screens showing updated data, reflecting new body temperatures of contacts during monitoring periods. The system was preset to ring an "alarm" any time a contact being monitored was found to have an elevated temperature.

The use of technology helped to address two critical challenges. First, given the copious amount and depth of data that needed to be reviewed on a regular basis, there was a significant possibility that errors would be made and suspected cases missed. Some degree of data processing

FIGURE 4: Public Health Assets Identified and Utilized during the Ebola Response



and presentation on the operational dashboard allowed for this analysis and review stage to be skipped, thereby enhancing the rate and accuracy of reporting and decision making. Second, the accuracy of data and reliability of data sources could have been questioned given the high number of home visits expected of an initially short-staffed team. The use of technology aided in this area by ensuring that data sources (that is, the points where contacts' temperatures were collected) were mapped using GPS, thereby preventing misreporting.

Data collection forms were loaded onto mobile phones. The surveillance team's quick adaptability to the use of these forms was aided by several factors. First, they had already been using similar handheld devices for AFP (Polio) surveillance. Second, given the widespread use of smartphones among Nigeria's urban populace, technical facility for their use was readily available. Finally, personnel recruited to the surveillance and contact tracing teams had been in contact with computers and similar technologies on a day-to-day basis. It therefore only took a few hours for them to fully understand the forms and begin to use them efficiently.

Aid and Technical Assistance: Contextual Knowledge, International Skills, and Applied Capacity Building

International. Despite the growing number of personnel being deployed from agencies such as the United States' CDC, and increased funding to the tune of over US\$400 million from the World Bank and €14 million (US\$18.7 million) from the European Union, global health agencies have been criticized for responding too slowly to the Ebola crisis in West Africa. The president of the United States has acknowledged that efforts made were insufficient if more infections and deaths are to be averted in the region.

In the Nigerian response, international development partners were at the battlefield well in time. Shortly following the reported index case, the CDC offered its technical support to the government of Nigeria for the response. Other development partners, including the WHO, UNICEF, MSF, and the Red Cross, mobilized local and international experts to support the response. The United Nations Population Fund; the BMGF; Canadian Department of Foreign Affairs, Trade, and Development; and the African Development Bank offered financial support.

Development partner support was allocated strategically using the existing and functional Development Partners' Group as a platform for coordination. In-kind support came in the form of expertise, techniques, training, materials, and commodities. For instance, WHO brought to the response its international experience in dealing

with previous Ebola outbreaks in the DRC and Uganda. Two WHO experts were solely responsible for case management and were relieved by MSF experts until local health care workers were sufficiently mobilized and trained, having completed several dry runs of facility entry and exit, patient management, and use of personal protective equipment. Similarly, UNICEF's years of experience in community mobilization were brought to bear in social mobilization efforts. The European Union played a critical role in the early deployment of mobile laboratories for testing. This technical expertise was domiciled within the EEOC's operational teams to advise and build the capacity of the local teams and concurrently carry out quality control (Shuaib et al. 2014). These organizations' established presence and years of implementing projects in-country precluded the need for contextual learning, a process that often takes time in a country as complex as Nigeria.

National. Local teams brought with them varied types and levels of skills and contextual knowledge. For example, certain foreign-trained members of the management team offered a mix of deep local knowledge and first-class technical skills. Additionally, although its laboratory did not have the recommended biosafety levels, Lagos University Teaching Hospital had the technical capacity to conduct laboratory diagnoses. Local teams whose expertise had been built over weeks of assisting the response in Lagos were mobilized to support the response in Port Harcourt in Rivers State once cases were confirmed there. Some of these personnel are now among the team of over 500 volunteers from Nigeria supporting other West African countries hit by this crisis.

The Nigerian private sector and business leaders supported the response either directly—for example, the provision of utility vehicles from Shell and MTN, a US\$1 million contribution through the Dangote Foundation, and ₦100 million (US\$621,000) from the Tony Elumelu Foundation—or indirectly, including through Oando's contributions via coordinated platforms of the Ebola Containment Trust Fund and Etisalat's support through the Private Sector Health Alliance of Nigeria. The latter, for example, lobbied telecommunications companies to provide free post-paid SIM cards and mobile phones for surveillance and contact tracing operations and has continued engagements to coordinate private sector support for the post-crisis strategy.

MOBILIZING HUMAN RESOURCES: CROWDING IN AND MOTIVATING THE RIGHT INDIVIDUALS

Nigeria's response began with a team of less than 20 people from the Lagos State Government and the WHO, increasing to 100 people with the addition of the

federal government and other partners within a few days of confirming the index case. Aside from government and partner secondees, most other team members working during the first week of the response were primarily volunteers. The team eventually expanded to the full complement of 1,800 persons. These individuals were recruited by invitation, including many high-performing graduates and trainees of the Nigeria Field Epidemiology Programme. Others responded to word circulating within the health sector, as well as talk shops held by the NCDC. These individuals had short-term contracts and were paid a daily fee for the period of the response. Individuals from the NFLETP or NCDC received *per diem* for feeding and accommodation. The NFELTP also handpicked several of its star graduates and trainees. The “per shift” fee is largely credited for the success of the recruitment exercise, as for some it served as a monetary match to the risk of exposure while taking care of infected patients. This highlights that—in a context where people lack motivation, feel underpaid, or struggle financially—financial incentives could offer significant impetus to ensure delivery of services.

Persons with clinical or public health expertise were employed in case management, contact tracing, and surveillance teams, while those with nonspecific expertise were assigned to less technical services such as administration, finance, or data collection for operations research. Incentives were based on job descriptions and/or terms of reference adapted from the Polio EOC, and were as large as ₦50,000 (US\$310) per shift, in addition to other benefits. This incentive package seemed more attractive to mid-level medical professionals such as senior registrars, who now had the opportunity to earn an entire month’s salary in a week. It would appear that this package was not sufficient enough to attract already established consultants, who earn approximately ₦1 million (US\$6,200) per month in gross salary.

Personnel were trained on case management and contact tracing by international experts and on surveillance by a technical team from the Polio EOC. Due to the urgency of implementation, training focused heavily on practical sessions, after which team members were deployed to specific tasks. Detailed job descriptions guided personnel activities within teams.

FLOW OF FUNDS: BRIDGING EARLY HITCHES TO EVOLVE INTO COORDINATED FEDERAL-STATE ACTION

Shortly after the Federal Government of Nigeria had declared a national emergency in the wake of the Ebola outbreak, it announced an intervention fund of ₦1.94 billion (US\$12 million) to strengthen the emergency response. The exact status of disbursement and flow of

these funds remained unclear for several weeks, sparking controversy. ₦200 million (US\$1.24 million) was allocated to the Lagos State Government and eventually disbursed in the later weeks of the response.

In the interim, and in the absence of federal funds in the early days, the Lagos State Government, international partners, and nongovernmental organizations funded initial activities. Within 48 hours of confirmation of the index case, the Lagos State health sector leadership requested and received approval for ₦27 million (US\$167,700) to renovate the Infectious Diseases Hospital. The fact that this early outbreak occurred in Lagos—the state with the highest internally generated revenue—has been noted as an important factor by many observers. There were no reports of approval or disbursement hitches within the EEOC, as team budgets were reviewed and signed off by a management/coordination team responsible for budget approvals and financial processes. The intricacies of this remain unclear, however.

The bulk of external funding came preallocated and was channelled to the response team through the United Nations or CDC funds to specific activities. For example, CAD\$70,000 (US\$54,700) was allocated specifically through the International Federation of the Red Cross and Red Crescent Societies to support the Nigerian Red Cross. The total value of cash and in-kind support to Nigeria’s Ebola response has not been quantified, but may be in the realm of US\$10–20 million.

The Federal Government of Nigeria also donated US\$3.5 million to other countries in the region.

GREATER TOGETHER: FEDERAL-STATE COLLABORATION

In a federal state such as Nigeria, coordination between the various levels of political and technical leadership could have proved challenging in delivering an emergency response, especially as there was an urgent need for both technical leadership and quick allocation of resources. Lagos State had mounted a response immediately after the first case of Ebola was confirmed and rapidly approved the release of funds for operations. Notably, the Lagos State Government’s approval of resources for the renovation of the Yaba Infectious Diseases Hospital—a federal government-owned facility—took place prior to the federal government’s announcement that it would allocate funds for the response.

With the activation of federal actors, and after declaring the outbreak a national threat, the federal government chose—rather than instituting a parallel response—to modify the existing state response. The result was a single, strong national EEOC with shared fiscal responsibility.

This institutional setup avoided the overlaps in resource allocation that have occurred in other fiscally decentralized areas of Nigeria's health sector. EEOC staff from federal and state governments worked under the technical direction of a single management team, itself comprised of managers from both federal and state levels.

With regard to interstate collaboration, the president convened the Governors Forum to develop state-level emergency plans should the outbreak spread across states. This mechanism served as a strong foundation for cooperation between Lagos and Rivers states after the disease was identified in Rivers State.

Lessons Learned: What Can Nigeria's Experience Tell Us about the Foundations of a Successful Emergency Response?

FEAR AS A GREAT MOTIVATOR FOR ALL

Many doubted that the Nigerian government would mount an effective response, let alone contain the Ebola outbreak in a complex, politically sensitive, and only partially functional institutional environment. International views of Nigerians and the Nigerian government had the potential to write off success before it was even attempted (Nwuke 2014). Then, to everyone's surprise, the response was not only quick and efficient, but also successful. This has raised the question: "how?" Many observers have responded: "fear."

Ebola's arrival in Nigeria incited fear and widespread panic, as it presented threats unknown, unquantifiable, and unimaginable. Nwuke (2014) reports on a CNN commentator's remark that the default belief was that Nigeria would become the "exporter" of Ebola to the rest of the world. This fear snowballed in response to the repetitive and dominant narrative in local and global media of a seemingly uncontrollable outbreak that was ravaging several countries in West Africa and would soon hit the rest of the world.

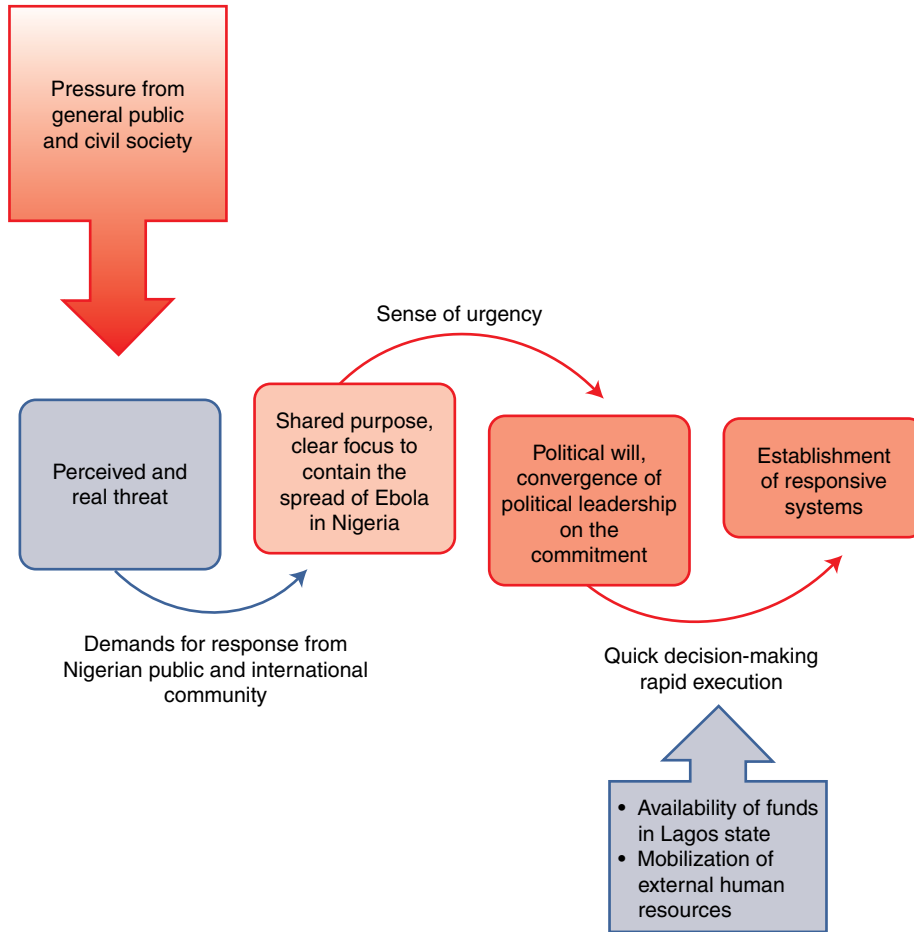
First, there was a personal and individual fear due to the contagious nature of Ebola, particularly in light of the fact that it arrived after the devastating impact the disease had already had on the West African population, economy, and social fabric in other countries in the region. Moreover, the fact that the index case was a senior diplomat resulted in the "it could be me" syndrome, motivating the country's elite to act. Nwuke (2014, 4) describes succinctly that symbols can be an "instrument of civic pedagogy," purporting that Ebola, a disease normally associated with poor regions, "entered Nigeria as a 'middle class disease.' It came in on an airplane, was smuggled in by a middle-class American of Liberian descent . . . landed in Lagos, which has a literacy level of more than 87 percent [and] showed up in the two

richest states of the Nigerian Federation . . ." with large, highly mobile populations. Similar rhetoric was used in Nigeria, "thanking God" that Ebola came through Lagos State borders and not any other, pointing to the fact that the alertness and aggressiveness of the response to Ebola were due in part to the fact that its arrival in Lagos significantly raised the profile of the outbreak. This hypothesis is further validated by comparison to the rural onset and spread of the outbreak in Guinea and the length of time (about four months) it took for Ebola to officially be declared a national emergency.

Second, Nigerians are prototypically labelled, by themselves and others, as people who "love themselves" and are afraid to die. This refers both to a collective death of the nation and to individual mortal death. Hence, some argue, we see the thriving of new religious denominations that preach prosperity and long life to its people, the growing commercialization of herbal remedies and supplements intended to support a longer life span, and seemingly perpetual dislike across ethnic divides without secession of any from the others. In the context of the Ebola outbreak, this deeply embedded fear of dying spurred the general public to put more pressure on the government, both informally and more formally through civil society and media, to respond quickly.

Third, Nigeria's global reputation seems to have been a motivating factor. Global narratives began to quantify the potential losses in billions of dollars. Spicer et al. (2014) posit that, in Nigeria and other similar contexts, quantitative information is invariably privileged over qualitative evidence. While many in leadership positions may not have been able to foresee or forecast the exact economic implications of such an outbreak, the approximation may have been somewhat like this: the projected fiscal loss to the West African region, whose economies were much smaller than that of Lagos, was

FIGURE 5: Translating Fear into Action



in the range of Nigeria's foreign reserves and therefore akin to the unimaginable loss of the country's entire "rainy day fund." This concern may have been buttressed by visible changes in the investment climate, including the withdrawal of expatriate mining company staff from countries where the outbreak had spiralled out of control. This scenario resembles Nigeria's experience with militancy in the Niger Delta, where it took the visible withdrawal of strategic oil company staff from flow stations and platforms, together with plummeting oil production, to finally urge action on the part of the government (Okonta 2014). Viewing the threat to the macroeconomic outlook and potential threat to revenues *vis-à-vis* costs of containment fueled the fears of the political and business elite.

Within a few days of the outbreak, Nigeria's president declared that the government would do anything possible to contain the outbreak. The government took immediate action following this announcement, convening an emergency meeting of the National Council on Health. These actions re-established a relationship of

trust and reassurance between the government and its people, even if only during the weeks of the outbreak (Nwuke 2014). Following the government's initial step, all actors and stakeholders involved in the response—regardless of their motivations and levels of appreciation of the threat—came together in pursuit of a common purpose, with a shared focus and a clear expected outcome (Figure 5).

Adams (2000) proposes that social groups oppose potential reform because of a belief that it will harm their economic interests. He adds that their political weight is a key determinant of whether the opposition can stall such reform. Similarly, social groups support political actions that protect their economic and other interests. In the case of the Ebola outbreak, the aggregation of political weight, pivoted on shared purpose, is all the leadership that was required. The result was a functional and responsive system with limited bureaucracy and competent and accountable technical leadership—a close ideal, if ever there was one.

TECHNICAL LEADERSHIP CAPACITY EXISTS IN NIGERIA AND IS EFFECTIVE WHEN UNLEASHED

Even in the presence of dedicated political will and leadership to address the outbreak, the response might still have been ineffective without the technical leadership demonstrated by key health sector actors from both the public and private sector.

The Minister of Health, Dr. Onyebuchi Chukwu, served as a “broker” between political and technical cadres. The minister provided the president with daily updates on the outbreak and advice on next steps. The deployment of Polio EOC personnel to the EEOC, for example, was an important government decision taken on the advice of the health minister and development partners, based on their knowledge of the gains made in polio eradication. The minister was able to ensure that key federal and state government actors such as Dr. Faisal Shuaib, Professor Abdulsalam Nasidi, and Dr. Kayode Oguntimehin, all of whom are infectious diseases specialists and epidemiologists with decades of in-country and international experience, were at the helm of operations for the response. This sort of effective technical leadership had not been marshalled in response to outbreaks of other diseases such as Lassa Fever or avian influenza.

The health minister also served as an interlocutor between the government and the Nigerian public, regularly giving updates on the status of the outbreak, on actions taken by the government, and on progress recorded. This deep understanding of the nature of public health threats, particularly in the context of a broader underlying mistrust between Nigerians and their government, was pivotal to regaining the trust and buy-in of the public, as earlier asserted.

At the operational level, the index case in Nigeria's Ebola outbreak could have been missed, given that it presented in a private facility that did not have clear channels of communication with the public health sector. Dr. Ameyo Adadevoh, a consultant physician at First Consultants Medical Center in Lagos, demonstrated exceptional astuteness and professionalism in quickly considering a differential diagnosis for the patient and raising a red flag by informing relevant authorities that Ebola may have entered Nigeria. Dr. Adadevoh acquired personal protective equipment and Ebola information and educational materials to distribute to her staff. Despite pressure from the patient's employers to discharge him, she enforced a quarantine that many attribute to preventing a wider outbreak. Although Dr. Adadevoh lost her life on August 19, 2014, her critical role in the response has merited continued recognition by both the Nigerian government and public as a “martyr” and hero. The Lagos

State Parliament recently voted to rename the Infectious Diseases Hospital in Yaba after her, in memoriam.

INCENTIVES AND HEALTH WORKERS' MOTIVATION: BYPASSING INERTIA WHILE MOTIVATING PASSIONATE INDIVIDUALS

It is worth highlighting here that, despite the use of certain elements of a pre-existing system, including human resources, the Ebola response had to externalize those resources, institute alternative processes, and draw selectively from a pool of experts who were either motivated or could be externalized.

Paradoxically, the same fear that drove the response threatened to deter it on a micro level when health care workers could not be mobilized to support the EEOC's case management, contact tracing, and surveillance functions. News emerging from other West African countries was revealing high infection rates among health care workers, with over 240 infected at the end of August 2014 and only half of them having survived. This identified and labelled health care workers as the most vulnerable group in this response. Additionally, in the months preceding the Ebola outbreak, the Nigerian Medical Association (NMA) had presented the government with a set of grievances concerning years of low wages, mismanagement, and rivalries with allied health professionals. This friction had soured the relationship between the Nigerian government and the NMA and resulted in strike action that was ongoing at the time of the Ebola response. The NMA, in a bid to stand firm in its position and reasoning for strike action, initially decided not to be part of the response but rather to “monitor” its progression.

Only a small group of less than 100 volunteers willingly, and without external motivating factors, joined the EEOC's response teams. A respondent from the EEOC suggested that many of them did so because they felt a sense of duty or were responding to a call for help from humanity as part of their “purpose.” Similarly, a member of the NFLETP staff said that she “just got up and went to Lagos” and stayed on a full two weeks before returning home, even though she did not have clothes, while her other colleagues declined to participate in the response. Following heavy criticism from the Nigerian government and other sectors, the NMA leadership called on doctors to support the Ebola response while sustaining strike action. They heeded this call, although not without incentivization.

In her study on the motivation of primary health care workers in Nigeria, Bhatnagar (2014) reports self-efficacy, vocation, religion, and humanity as key intrinsic motivators. She suggests that most Human Resources

for Health interventions in Nigeria currently focus on extrinsic motivators, particularly financial incentives, with little integration of other organizational factors such as good working conditions. Knowledge and mistrust of existing organizational gaps in the health system might have served as an initial disincentive for health workers. However, out of the pangs of these resource limitations, creative solutions were borne when the EEOC devised an incentive-based personnel mobilization strategy. Health care workers' reactions were twofold. Those who participated in the response did so as individuals rather than as members of professional health bodies, compelled primarily by large shift premiums and other hazard allowances and benefits. For other health care workers, especially some of the doctors on strike, neither financial incentives nor the provision of personal protective equipment was sufficient to incentivize their participation in the response. The WHO's Ebola response roadmap, released later that month, advised that "governments must rapidly establish a comprehensive package that defines the salary, hazard pay and—where appropriate—insurance/death benefit available to each category of worker required to implement the national strategy" (WHO 2014a).

OPERATIONAL EFFICIENCIES: CLEAR ROLES, RESPONSIBILITIES, AUTONOMY, AND PROACTIVE COMMUNICATION

Shuaib et al. (2014) state that contact tracing efforts are burdened by the complex nature of transit, commercial, and public health notification and reporting mechanisms. With a human resource capacity of 1,800, the EEOC's need to meticulously review all data generated frequently with minimal error and to make and execute decisions quickly required more than just technical capacity. Nigeria's primary health care systems have struggled in the past with coordination and the translation of policies into practice, owing to limited access to operational funds from higher levels as well as to bureaucracy making implementation of basic decisions protracted and unwieldy. Although the EEOC had initial funding delays, operations were still executed efficiently. This is due in part to a bit of innovative thinking on procurement processes, as well as to stopgap funding from a state that had the means and could leverage potential contributors from the private sector. Also important was the fact that decision making took place at the level of the response team/unit heads and at the senior management/strategy group level.

In its core structure, the EEOC exhibited autonomy at two levels. At the management level, the EEOC management team could carry out operations quickly and in a manner devoid of bureaucracy, yet remain accountable to health sector and national leadership.

For example, the minister of health and the president received daily briefings, but decisions on action items such as the procurement of vehicles for operations and approval for this within a 24-hour period were up to the EEOC leadership. Each of the specialist units, which were headed by expert epidemiologists and supported closely by international experts, used their terms of reference to guide their activities but had some degree of autonomy over microplanning and implementation. Decisions on implementation plans, resource requirements, staffing acquisition, and training rested with team leaders, with oversight from the management team.

Despite the likelihood of a directive management approach, owing to the emergency nature of the operation and the EEOC's hierarchical organizational structure, the clarity of functions for each of the specialist units fostered the autonomy that teams needed to develop their own operations. Through this operational-level autonomy, the EEOC was able to override a system in which files could pass through multistage approvals, taking weeks or months. At the same time, the review and supervision process was coordinated and regular enough to ensure the teams' accountability to EEOC management and the flow of information across teams rather than just vertically.

TECHNICAL ASSISTANCE: INTERNATIONAL EXPERTISE TAILORED TO LOCAL REALITY BUILDS TRUST AND RESULTS

The global threat presented by Ebola underlay the international response in Nigeria, taking into account considerations such as Nigeria's highly mobile population, with links to many countries abroad, as well as the widespread local presence of international nonprofit organizations and businesses. Leach (2008) proposes that the media-fueled narrative focuses on the threat to and need to protect northern populations, rather than on the fear of an emerging plague that could globally "infect us all." Irrespective of the genesis of motivations, Nigeria had never had an Ebola outbreak, and the fear of both a localized and wider outbreak similar to that in Guinea, Liberia, and Sierra Leone was a crisis that no one was willing to envision. There was also the risk that such a scenario would undermine the state's capacity to respond. Attention turned to the international community to share its knowledge and expertise, resulting in a well-coordinated, complementary partnership.

International and local experts jointly used a "holding room" approach in the management and execution of the response. The level of cooperation and coordination was greatly enhanced by the presence of technical assistance that had already been in place in Nigeria and was therefore well positioned to broker international

expectations and expertise within available systems. All of the development partner representatives in the strategy group had worked in Nigeria for five years or longer. Locally, a crop of experienced field epidemiologists and EEOC managers who had already established a work rhythm with development partners through the NFEELTP and polio eradication efforts created an enabling environment for the receipt of partner support.

One form of assistance—perhaps unintended, but present—was “silent arbitration,” through which the presence of development partners focusing solely on outbreak response encouraged local leadership, despite opposing political stances and different levels of government, to focus on EEOC efforts and continue to steer in the direction of success. A respondent mentioned having to “put all aside and work together to fight this thing,” referring to initial friction over who should lead and own the response. Although there was no outward contention, there was some tension following the CDC’s request for a staff member from the NCDC to lead the recruitment process for the case management team, when it seemed that the personnel initially instituted by the state government were not getting results. This arbitration helped smooth in-country and North-South cooperation and create partnerships that yielded results.

The rapid capacity built among a significant number of Nigerians positioned the country to provide regional support by deploying—in a relatively rare example of South-South cooperation—over 250 personnel who were initially part of Nigeria’s Ebola response to assist the responses in Liberia, Sierra Leone, and Guinea. Traditional cooperation between Nigeria and development partners is a metamorphosis of the old aid narrative, which Leach (2008) refers to as presenting a heroic west versus a weak and needy developing world; Nigeria’s is rather a tale of global concern, collaboration, and shared success among local and international heroes alike.

DATA AND INFORMATION SHARING FOR GOOD DECISION MAKING AND ADAPTIVE IMPLEMENTATION

Nigeria’s Ebola response generated significant amounts of data at rapid rates, which were reviewed intensely on a frequent basis and used to modify implementation strategies and plans. This use of data highlights the importance of data-informed decision making to yield results. In addition, the fact that the data were of good quality (thanks, in part, to the use of handheld devices), well organized, accessible, and analyzable further enhanced the value of the information. A critical conjecture here is the catapulting effect of data-informed decisions on the pace and quality of implementation. Data from the response flowed not only vertically,

but also across teams, and thus catalyzed operational efficiency. A notable example is the transfer of patients from the surveillance team to the case management team with the onset of symptoms and upon confirmation of laboratory results. The two teams attained such an efficient rhythm that team members colloquially termed it the “SWAT” operation.

A gap still remains in making data available to public health practitioners and researchers for retrospective analyses. Use of these data could be invaluable to implementers of health programs in Nigeria, and to the ongoing regional response. A detailed documentation process led by the federal government and supported by various consultant teams is underway and may yet provide more evidence from the country’s response.

In addition, in the early days of its operations, the EEOC learned a lesson from an initial threat to containment efforts. Within a few weeks of the Ebola outbreak, a rumor (initially circulated via social media and later via SMS) convinced many people all over Nigeria that drinking and bathing in salt water would protect them from Ebola infection. Within 48 hours, at least two fatalities were recorded as a result of ensuing hypertensive crises. Although the EEOC had already structured daily media engagements, this was a frantic call for dissemination of accurate information and a reshaping of the narrative of fear and panic into one of awareness and adherence.

Embedded in a communication channel that had initially caused harm was an opportunity to disseminate accurate prevention information proactively. Prior to this, the media had led the Ebola narrative, often speculating on areas where information was missing or not shared by the government. For example, a great deal of media speculation followed the government’s release of partial information about a family under surveillance who had escaped, without disclosing who the individuals were or where they had been. Although the information management and public disclosure strategy was informed by the medical ethics of confidentiality (including permission to disclose information if there is a public threat) and careful consideration of cultural sensitivities around stigma (better understood after years of HIV programming in the country), the Ebola crisis highlighted the ethical dilemma of balancing disclosure and confidentiality in the face of possible threats to the public.

Ebola-related fatalities were a stark reminder that, in the absence of proactive dissemination of accurate information, the media will ultimately decide whether we will be afraid or aware, and people will make poor decisions on the basis of inaccurate information. In countries such as Sierra Leone, myth and rumors circulated for such prolonged periods that a reversal of

the prevention message was not easy. Many refused to adhere to quarantine instructions, and some refused to be treated. One Ebola facility was looted by hoodlums who gave little thought to the risk of exposure. The ability of key decision makers in Nigeria to recognize and quickly reverse communication trends not only informed the public on preventive measures but also helped build the trust that was needed to elicit widespread cooperation from such a large population.

BUILDING ON—AND STRENGTHENING— PRE-EXISTING SYSTEMS

The Ebola response system was established using pre-existing elements from the health system, complemented

by individuals from outside the public system, and instituting within it new processes and highly skilled and motivated individuals. In using existing infrastructure and human resources, implementation could be quick, and considerable cost savings could be achieved. This approach contrasted with years of implementing vertical programs that set up parallel structures, complicating coordination and imposing significant costs.

The use of pre-existing systems also presented an opportunity to strengthen those that had been neglected or were poorly functional, as in the example of increased referrals for Lassa Fever testing during the Ebola crisis due to mix-ups in the symptoms.

Implications of Nigeria's Ebola Response for Service Delivery More Broadly

This case study confirms the growing body of evidence that pockets of effectiveness exist in Nigeria. Despite the country's international reputation for governance challenges and ineffectiveness, the country is full of potential and is able to act when certain factors are in place. In this case, the fact that Ebola was blind to economic class and threatened the elite was a primary motivator for the strong institutional response. It is difficult to know, however, how replicable such an experience would be in other areas of service delivery.

Other critical factors that have been documented in recent work on pockets of effectiveness are also borne out in this case study. Strong, passionate leadership, coupled with first-class technical capacity—achieved in this case through a blend of contextualized international assistance and a highly capable Nigerian team—are critical for effective delivery in Nigeria. Ensuring that such teams have clear roles and responsibilities, strong internal communication, and freedom from political interference is also important. A proactive communication strategy is required to build a broader coalition of support, and demand-side actors such as nongovernmental organizations play a helpful role in delivering reform and results in Nigeria.

Delivery in this case was enhanced by the existence of systems and practices, although in a hybrid arrangement in which passionate individuals were “hired in” to deliver the response when official health workers were on strike or felt too threatened. Initial hiccups in fund flows were bridged because the outbreak was in relatively well-resourced Lagos State, and procurement practices were streamlined to deliver goods when and where they were needed. Technology played a useful role as part of a broader strategy, supporting evidence-based decision making, close supervision of data collection, and quick adaptations as necessary. The case shares these factors with a number of other case studies commissioned by the World Bank on pockets of effectiveness (Lewis and Watts 2015b).

Several important conclusions apply to health sector reform and service delivery more broadly:

- **Effective leadership.** The unexpected policy response to the Ebola outbreak reveals strong political and technical leadership in the country, which can be spurred to move beyond political will and the will to act toward firm commitment and execution if there is a sufficient threat. In addition, despite systemic weaknesses such as fragmentation, bureaucracy, mismanagement, and transparency challenges, Nigeria can organize systems to be responsive and efficient. Good motivation lies at the heart of any successful action, and fear was a great motivator in this case. The question remains how to elicit this strong leadership in the absence of an immediate public threat. The answer may lie in the packaging of narratives and findings on global health issues.
- **Timely action.** The earlier mini-case studies on the lead poisoning outbreak response and the overwhelming Ebola burden in neighboring countries demonstrate the potential harm of delayed responses, whether due to governance challenges or inadequate surveillance systems. In Nigeria's Ebola's response, timeliness was critical to the country's ability to contain the spread of the disease. Federal government officials have said that declaring a national public health emergency upon confirmation of the first case of Ebola allowed for the required systems to be put in place (Shuaib et al. 2014). Most response activities, such as planning teams, contact tracing, and case management, had attained implementation synchronicity within a few days of index case confirmation as a result of optimal combinations of political leadership, technical competence, and good decision-making tools. A similar situation was reported with regard to Senegal's response and containment of the virus. This points to the importance of ownership of processes and suggests that projects can be extremely successful if technical processes are intricately tied with government oversight, especially if such processes are owned by the government.

- **Meaningful autonomy.** Giving mid-level technical managers control over the planning and management of their operations circumvents unwieldy bureaucracy that can throttle a rapid response. It allows them to find innovative solutions to challenges and can catalyze the efficient decentralization of functions. This is consistent with the findings of performance-based financing (PBF) interventions, which show that health care results are achieved not by policy makers but by technical cadres at operational levels, particularly when they are granted autonomy. Moreover, autonomy and accountability are not mutually exclusive and can coexist in a manner that optimizes the delivery of priority interventions.
- **Well-designed incentives.** Incentives can help motivate health care workers, but they must be packaged and offered in accordance with the broader economic, political, sectoral, and cultural context. Development of incentive-based approaches should be considerate of intrinsic motivators and the premium placed upon those we seek to incentivize. Understanding situations where financial incentives can work alone and those where they need to be integrated with other nonfinancial tangible or intangible incentives is central to the success of any such strategy. Adams (2000) proposes that sector institutions and social groups are pertinent to the political support base of policies and interventions; therefore, their inclusion, recognition, and incentivization must be planned in the context of longer-term effects on their commitments. Bhatnagar (2014) also prescribes exploring strategies that can potentially engender intrinsic motivation within the given context.
- **Existing assets.** Identifying existing assets and resources—whether organizational, infrastructural, human, or fiscal—and quickly harnessing these techniques, technologies, and processes can yield rapid results while ensuring policy continuity. This was the case, for example, with the Ebola response's adoption of techniques used in polio eradication and in the LSPHCP. Systemic reviews and extensive mappings of sectoral assets and their functionality could be informative in such a process.
- **Data-driven decisions.** Data should not merely be generated, but utilized. The availability of data for decision making affects not only the quality of decisions but also their credibility. Making information available, if properly generated and adequately utilized, fosters the potential for real-time learning and application of lessons learned, which could prevent catastrophic mistakes and guide corrective actions. There is room for strengthening health sector leadership in this area in Nigeria.
- **Relevant technical assistance.** Technical assistance must be timely and provided within context by people who have an understanding of local systems, organizational culture, and sectoral and political dynamics. This is best achieved in collaboration with competent and highly motivated local experts. Acknowledging each partner's strengths and expertise, as well as matching them in a manner that is complementary to the achievement of a certain goal, are both necessary and critical for such partnerships to be successful. It is also important to recognize the value of technical assistance agencies, which goes beyond financial and technical skills and could play out in mediation or coordination.

When Nigeria's traditional primary health care system is juxtaposed against its Ebola response (Table 2), it presents a tale of two systems. This study shows that there are pockets of effectiveness within that traditional health care system, although it may be premature to declare them entirely successful. The World Bank has made investments at various levels of Nigeria's primary health care system to encourage improvements in health worker performance and accountability, as well as accountability among policy makers at the local government and state levels using results-based financing (RBF) approaches, including PBF. This approach aims to strengthen institutions and is showing promising early results. Results to date suggest that targeted incentives, a flexible nonrecurrent budget, and increased autonomy can strengthen coordination and service delivery. A recent pilot of an information and communications technology-based social accountability system within the RBF project shows improvements in quality of care using data from operations and citizen feedback. Table 2 compares the three systems to draw some parallels in the lessons learned.

Health systems and policy reformers will benefit from understanding not only what has worked in the contextual immediateness of the Ebola response, which was vertical in nature, but also what may be sustained and eventually institutionalized from within Nigeria's pockets of effectiveness and the challenges that persist therein. Going forward, it will be important for the Nigerian government to remain vigilant, building on the lessons learned during the Ebola response and the effective platform provided by the EEOC to strengthen its overall disease surveillance systems and continue efforts to ensure strong technical leadership and regular communication with the public.

TABLE 2: Juxtaposing Nigeria's Traditional Health Care System with the Country's Ebola Response

Traditional Primary Health Care	Nigeria's Ebola Response	Primary Health Care in Performance-based Financing States
<ul style="list-style-type: none"> • <i>Fragmentation and poor coordination</i> between federal, state, and local government levels • <i>Unclear accountability</i> and poor performance review to strengthen it • <i>No incentives</i> for good performance or disincentives for poor performance • <i>No cash or autonomy</i> at health facilities 	<ul style="list-style-type: none"> • <i>Coordination strengthened</i> very quickly • <i>Clear accountability</i> in most matters (especially technical) • Certain degrees of <i>autonomy</i> • <i>Intense review of performance/data</i> to make decisions • <i>Motivation and incentives</i> for “volunteers” • <i>Release of funds</i> for operations 	<ul style="list-style-type: none"> • <i>Improving coordination</i> of primary and secondary health care, although referral systems could still be strengthened • <i>Accountability of health workers</i> to LGA leadership and all levels of leadership accountable to citizens as well as counterparts • <i>Copious amounts of data generated</i> and minimally utilized for a while; various strategies introduced to foster use • <i>Incentives for health workers</i> resulting in changes in quality of care and improvements in organizational performance • <i>Healthy health facility earnings</i> from PBF available for operations independent of release of funds from government with liberty to allocate in alignment with broad guidelines

Sources: World Bank, Nigeria State Investment Health Project, Project Appraisal Document (column 1); Nigeria State Health Investment Project operational and review reports (column 3).

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