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World Health Organization and Health Crisis Management in the Abuja Municipal Area Council: A Preliminary Investigation

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Abstract

This paper investigates the World Health Organization's role in managing health crises within the Abuja Municipal Area Council through a framework of Global Health Governance. The study employs a conceptual approach integrating qualitative data from WHO reports and peer-reviewed journals. The research examines the World Health Organization's interventions in vaccination programs, disease outbreak control and health infrastructure enhancements. Significant initiatives include the introduction of the HPV vaccine in 2023, targeting girls aged 9-14 to reduce cervical cancer incidence. In addition to examining notable successes recorded, such as improved vaccination rates and disease control, the paper identifies challenges, including vaccine hesitancy, inadequate healthcare infrastructure, and the critical issue of inconsistent funding. The need for sustained funding is stressed to make a case for the financial aspect of health crisis management. Recommended strategies to address these challenges include engaging local influencers to combat misinformation, investing in healthcare facilities and advocating for sustained funding. The study underscores the importance of sustained vaccination and financing in health crisis management as critical factors in the success of WHO's interventions. The paper also highlights the necessity of international collaboration in health crisis management. While WHO's interventions have significantly improved public health outcomes in AMAC, continued international support, innovative strategies, and multi-sectoral collaboration are beneficial and essential for addressing ongoing and emerging health challenges.

Keywords: WHO, Nigeria, Crises Management, Abuja

Introduction

The global community continually faces threats from emerging and re-emerging diseases. Countries worldwide are at risk from various health hazards,

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including infectious diseases, food contamination, climate change, and insecurity. The increasing interconnectedness of countries exacerbates these health challenges through globalisation, facilitating the rapid spread of diseases. For instance, the COVID-19 pandemic highlighted how quickly an infectious disease can traverse borders, affecting millions worldwide and overwhelming health systems. In this context, the World Health Organization (WHO) is pivotal in supporting countries to mitigate these risks. It proactively develops and strengthens the core capacities outlined in the International Health Regulations (IHR), which aim to ensure global health security by improving the ability of countries to detect, assess, notify, and respond to public health emergencies. The IHR, revised in 2005, provides a framework for the international community to prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide.[3]

In Nigeria, the WHO's interventions are critical, particularly in the Abuja Municipal Area Council (AMAC), which faces unique health challenges. Abuja, the capital city of Nigeria, is characterised by a high population density, significant internal migration of people from diverse cultural backgrounds, as well as immigration into the territory from abroad due to the city's role as Nigeria's administrative and political centre, all of which contribute to its complex health landscape, further amplifying its vulnerability to health crises. AMAC's health challenges are multifaceted. The area is prone to infectious outbreaks such as Lassa Fever, Cholera and Polio, to mention a few. These outbreaks are often exacerbated by inadequate healthcare infrastructure, poor sanitation, and limited access to clean water. Additionally, Abuja's rapid urbanisation has led to environmental changes that increase the risk of vector-borne diseases like malaria and dengue fever.[4] Climate change is another significant factor impacting AMAC's health. Changes in temperature and precipitation patterns can alter the distribution of diseases and affect food security, leading to malnutrition and associated health problems. The increased frequency and severity of extreme weather events, such as floods and droughts, also pose direct and indirect health risks, including injuries, displacement, and mental health issues.[5]

The WHO works closely with Nigeria's international, national and local health authorities to address these complex challenges. This collaboration focuses on several key areas: strengthening health systems, improving disease surveillance and response, enhancing public health preparedness, and ensuring effective communication and community engagement. By building the capacity of health workers and improving infrastructure, the WHO aims to create a more resilient health system capable of responding to various health threats. One notable area of WHO intervention is in the control of vaccine-preventable diseases. The Organisation's interventions/vaccination campaigns have significantly reduced

[3]World Health Organization. *International Health Regulations*. 3rd ed. (Geneva: World Health Organization, 2005).
[4]Ayuba, H., L. A. Manaf, and A. H. Sabrina. "Environmental Changes and Their Implications on Human Health in Nigeria." *Journal of Environmental Science and Technology. vol.* 6, no. 2 (2013): 70-78.
[5] Oyeniyi, B. "Climate Change and Its Impact on Health in Nigeria". *African Journal of Environmental Science and Technology.* 5, no. 3 (2011): 146-152.

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the incidence of polio, measles and leprosy[6] in Nigeria. The successful eradication of polio in the country in 2020 following sustained vaccination efforts underscores the importance of such initiatives.[7]

Furthermore, the WHO's role extends beyond immediate health responses, including strengthening the long-term health system. This involves supporting the development of policies and strategies that promote health equity, improve access to essential health services, and address the social determinants of health. For example, the WHO has been instrumental in promoting Primary Health Care (PHC) as a cornerstone of the health system, ensuring that health services are accessible, affordable, and of high quality.[8] This paper investigates the WHO's role in health crisis management within the Abuja Municipal Area Council, emphasising the organisation's interventions and their impact. By examining specific case studies using statistical data, the paper aims to provide an understanding of how WHO's efforts contribute to improving health outcomes and enhancing the resilience of the health system in this critical area of Nigeria.

Research Method

This study employed a conceptual approach to investigate the World Health Organization's (WHO) role in managing health crises within the Abuja Municipal Area Council (AMAC). The methodology integrated qualitative and quantitative data from secondary sources to analyse WHO's interventions and their impacts. The conceptual approach allowed for exploring existing literature, policies, reports, and statistical data, providing a framework for understanding the complexities of health crisis management in AMAC.

The study relied on various secondary sources: Official documents and publications from the World Health Organization provided detailed accounts of health interventions, strategies, and outcomes. Academic articles offered critical analyses and empirical data on health issues, interventions, and outcomes relevant to AMAC. Reports from Nigerian health authorities, including the Nigeria Centre for Disease Control (NCDC), provided local context and data. Documents from non-governmental organisations involved in health initiatives offered insights into on-the-ground activities and community impacts. Also, news articles and media reports provided real-time information on health crises and public responses. The study systematically reviewed the above

[6] Okeke Tochukwu, and Nwankwo Ignatius Uche, "Historical Perspectives on Leprosy Control in Nigeria: Problems and Prospects". *International Journal of Health and Social Inquiry*, Vol. 3, No. 1, (2017): pp 141-151. https://journals.aphriapub.com/index.php/IJHSI/article/view/330

[7] Global Polio Eradication Initiative. "Nigeria Declared Free of Wild Poliovirus." *Global Polio Eradication Initiative, 2021.* https://polioeradication.org/news-post/nigeria-declared-free-of-wild-poliovirus/.

[8] Obembe, T. A., and K. O. Osungbade. "Primary Health Care in Nigeria: 24 Years After OlikoyeRansome-Kuti's Health System Reform." *Nigerian Journal of Medicine. Vol.* 26, no. 4 (2017): 345-355.

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sources to collate relevant information on WHO's health crisis management efforts in AMAC.

The study was grounded in the framework of Global Health Governance, which provided a lens through which it examines WHO's role and effectiveness in managing health crises. This framework considered the multi-level interactions between global, national, and local health actors and the policies and strategies employed to achieve health security. To ensure the validity and reliability of the findings, multiple data sources were used to cross-verify information and provide coverage of the topic. Each source was evaluated for its credibility, relevance, and accuracy. Data consistency was checked through repeated reviews and cross-referencing information from different sources. While the conceptual approach provided a broad understanding of WHO's interventions, it was inherently limited by the availability and quality of secondary data. The study was also constrained by potential biases in the sources, such as reporting biases in media articles or publication biases in academic journals.

World Health Organization and its Interventions in the AMAC's Health Landscape

The WHO's interventions in the AMAC's health sector are significant in vaccination programs, disease outbreak control, and health infrastructure enhancements. These areas of intervention shall form the basis of the following discussions and analyses.

Vaccination Programs:

Figure 1 illustrates the range of WHO-assisted vaccinations administered in AMAC from 2014 to 2023. This data highlights the progressive increase in vaccination coverage over the years, underscoring the effectiveness of WHO's sustained efforts. As shown in the figure, the introduction of new vaccines, such as the HPV vaccine in 2023, significantly contributed to the overall improvement in public health outcomes. The WHO's vaccination interventions have significantly improved health outcomes in Nigeria, reducing child and maternal mortality rates and eradicating diseases such as smallpox and polio.[9] Due to its status as Nigeria's capital, Abuja's diverse population poses unique health challenges. Cultural diversity presents attitude diversities towards medical interventions, including vaccinations. This diversity necessitates tailored strategies to ensure broad acceptance and coverage of vaccination programs.

HPV vaccine campaign

One of the cornerstone vaccination initiatives in AMAC is the HPV vaccine campaign introduced in 2023. This campaign aims to reduce the incidence of Cervical Cancer by targeting girls aged 9-14 before they become sexually

[9] World Health Organization. *HPV Vaccination and Cervical Cancer Prevention in Nigeria*. (Geneva: World Health Organization, 2023). https://www.who.int/nigeria/reports/hpv-vaccination-cervical-cancer-prevention.

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active.[10] The introduction of the HPV vaccine is crucial because Cervical Cancer is the third most common cancer among Nigerian women and a leading cause of cancer-related deaths.[11] The initiative involved extensive training for over 35,000 health workers and establishing numerous vaccination sites across urban and rural areas of the AMAC, including mobile units, to reach the remotest communities.[12]

The implementation of the HPV vaccine program faced several challenges, including vaccine hesitancy driven by cultural and religious beliefs. To address this, the WHO collaborated with local influencers, religious leaders, and community health workers to educate the public on the safety and benefits of the vaccine. This collaborative effort helped to improve the acceptance rate and ensured the vaccination of a significant portion of the target population. In addition to the HPV vaccine, the WHO has been instrumental in polio eradication efforts in AMAC. Nigeria was declared polio-free in 2020, a milestone achieved through persistent vaccination campaigns and public health initiatives. However, the resurgence of polio in 13 states, including the Federal Capital Territory, underscored the need for continued vigilance. The WHO's unwavering support for mass vaccination campaigns and enhanced surveillance systems to contain these outbreaks and prevent further spread is a testament to its persistence in combating the resurgence of the health emergency.

Fig. 1: Table of WHO-assisted vaccinations administered in AMAC from 2014 to 2023.

Penta 3 given	Vitamin A given	Measles 1 given	Men A given	Yellow Fever Vaccine given	Yellow Fever given	Measles 2 given	Rota 3 given	Fully Immunized < 1 year	Amount of RI funds received	Non-Pregnant women given	Pregnant women given TD	Tetanus Toxoid Dose 1	Tetanus Toxoid Dose 2	Tetanus Toxoid Dose 3	Tetanus Toxoid Dose 4	Tetanus Toxoid Dose 5
39046.		27390.		26425.		5488.		52933.				22275.	14573.	8547.	6959.	6029.
40929.		30980.		29695.		5616.		20275.				22761.	14491.	6056.	3652.	2149.
31178.		27284.		26110.		4676.		15835.				19999.	12352.	4820.	2155.	1453.
39361.		35783.		33701.		9449.		17324.				22258.	13992.	4469.	2314.	1262.
43315.		39871.		42858.		6731.		23626.				23859.	17715.	5702.	2805.	2237.
42629.		37722.		40844.		2160.		24034.				25759.	18369.	6386.	2866.	2058.
37906.	7037.	34729.	4558.	28246.	6209.	8991.	236.	27976.	176985.	1393.	5719.	21244.	15251.	4278.	2115.	1368.
47348.	39589.	43446.	37749.		51412.	16764.	4768.	26047.	43509.	13363.	59955.					
45667.	64589.	51438.	40524.		43054.	77608.	12944.	34188.	6026.	14597.	51063.					
46632.	129902.	54431.	39334.		41249.	28692.	37379.	31517.	3062.	11920.	48514.					

[10] UNICEF. *Introducing the HPV Vaccine in Nigeria*. (New York: UNICEF, 2023). https://www.unicef.org/nigeria/reports/introducing-hpv-vaccine-nigeria.
[11] World Health Organization. *HPV Vaccination and Cervical Cancer Prevention in Nigeria*. (2023)
[12] UNICEF. *Introducing the HPV Vaccine in Nigeria*. (2023)

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Penta 3 given	Vitamin A given	Measles 1 given	Men A given	Yellow Fever Vaccine given	Yellow Fever given	Measles 2 given	Rota 3 given	Fully Immunized < 1 year	Amount of RI funds received	Non-Pregnant women given	Pregnant women given TD	Tetanus Toxoid Dose 1	Tetanus Toxoid Dose 2	Tetanus Toxoid Dose 3	Tetanus Toxoid Dose 4	Tetanus Toxoid Dose 5
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46632.	129902.	54431.	39334.		41249.	28692.	37379.	31517.	3062.	11920.	48514.					

Source: Surveillance/Health Department, Abuja Municipal Area Council, Apo Office, Abuja.

The HPV vaccination campaign has had a significant impact on public health in AMAC and beyond. Preliminary data indicates high vaccination coverage, with thousands of girls receiving the HPV vaccine. This achievement is expected to lead to a substantial reduction in cervical cancer cases and deaths in the coming years. Furthermore, the campaign has strengthened the overall immunisation infrastructure, improving Nigeria's capacity to manage future public health initiatives.[13] The success of the HPV vaccination campaign in Nigeria underscores the importance of international collaboration, robust planning, and community engagement in public health initiatives. The WHO's support and the Nigerian government's commitment have been pivotal in achieving these outcomes, providing a model for similar interventions in other regions facing high cervical cancer burdens.

Polio Eradication Campaign

Figure 2, which depicts the proportion of health workers trained during the 2015/16 and 2017/18 campaigns in North Central Nigeria, is instrumental in understanding the WHO's comprehensive approach to polio eradication. The data indicates that a high percentage of health workers were trained, which directly correlates with the increased immunisation rates and the eventual certification of Nigeria as polio-free in 2020. The figure effectively supports the argument that capacity building among health workers is a critical component of successful vaccination campaigns.The World Health Organization (WHO) played a crucial role in certifying Nigeria as polio-free in 2020. This certification marked a significant milestone in global health, considering that Nigeria was one of the last countries to eradicate wild poliovirus. The success is primarily attributed to WHO's comprehensive and sustained efforts in collaboration with national and international partners to address the crisis. Despite the 2020

[13] World Health Organization. *HPV Vaccination and Cervical Cancer Prevention in Nigeria*. (2023)

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certification,the recent resurgence of vaccine-derived poliovirus outbreaks in Nigeria, including in the Abuja Municipal Area Council (AMAC), underscores the ongoing need for robust immunisation programs. These outbreaks are a reminder that the fight against polio is not over and that continued vigilance and immunisation efforts are essential to prevent further resurgence.

Nigeria's journey to polio eradication has been fraught with challenges. For years, the country was a hotspot for polio transmission due to factors such as political instability, social unrest, and logistical difficulties in reaching remote areas. Moreover, vaccine hesitancy fuelled by misinformation played a significant role in hampering immunisation efforts. In the early 2000s, several northern Nigerian states, including AMAC, experienced a suspension of polio immunisation campaigns due to unfounded rumours that the vaccines contained anti-fertility agents. This suspension led to a resurgence of polio cases in Nigeria and neighbouring countries, setting back global eradication efforts.[14]

WHO's strategy in Nigeria involved a multi-faceted approach to address these challenges. WHO established a robust surveillance system to detect and respond to polio cases quickly. This system included environmental surveillance, which involves testing sewage samples for poliovirus, and Acute Flaccid Paralysis (AFP) surveillance, which tracks cases of paralysis in children under 15 years old.[15] To boost immunity in high-risk areas, WHO, in collaboration with the Nigerian government, United Nations International Children Emergency Fund (UNICEF) and Rotary International, conducted regular National Immunization Days (NIDs) and Sub-national Immunization Days (SNIDs). These campaigns involved door-to-door vaccination drives, ensuring that even children in the remotest communities and conflict-affected areas received the polio vaccine.[16] In some rural areas, varying degrees of resistance to vaccine uptakes were recorded, presenting a challenge. Addressing vaccine hesitancy required targeted communication strategies. WHO worked with local leaders, religious authorities, and community influencers to dispel myths and promote the benefits of vaccination. Educational campaigns were tailored to cultural contexts, helping to build trust and acceptance of the polio vaccines.[17] To make it more effective, WHO emphasised the importance of integrating polio vaccination with routine immunisation services at various hospitals and health centres to ensure sustained coverage. This approach improved polio immunisation rates and strengthened the healthcare system, providing a platform for delivering other essential health services.[18] Innovative technologies played a pivotal role in enhancing polio eradication efforts. Geographic Information Systems (GIS) were

[14]Jegede, A. S. "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" *PLoS Medicine.* 4, no. 3 (2007): p 73.
[15] World Health Organization. *Guidelines for Environmental Surveillance of Poliovirus Circulation*. (Geneva: World Health Organization, 2019)
[16] Global Polio Eradication Initiative. "Nigeria Declared Free of Wild Poliovirus." (2020)
[17] Larson, H. J., W. S. Schulz, J. D. Tucker, and D. M. Smith. "Measuring Vaccine Confidence: Introducing a Global Vaccine Confidence Index." *PLoS Currents.* 7, (2015)
[18] World Health Organization. *Polio Eradication and Endgame Strategic Plan 2019-2023*. (Geneva: World Health Organization, 2020).

used to map out high-risk areas and plan targeted vaccination campaigns more effectively. Mobile health (mHealth) tools also helped track vaccination coverage and monitor the cold chain to ensure vaccine potency.[19]

Regrettably, the recent vaccine-derived poliovirus outbreaks in Nigeria, including AMAC, are attributed to gaps in immunisation coverage and unvaccinated children. Vaccine-derived polioviruses occur when the weakened virus used in Oral Polio Vaccines (OPV) mutates and spreads in under-immunised communities. This situation highlights the critical need to maintain high vaccination coverage and switch to Inactivated Polio Vaccines (IPV) where feasible.[20] WHO continues to support Nigeria in addressing these outbreaks through intensified immunisation campaigns, enhanced surveillance, and community engagement efforts. The organisation is also working with the Nigerian government to transition to the exclusive use of IPV, eliminating the risk of vaccine-derived poliovirus. Additionally, WHO provides technical assistance and resources to strengthen Nigeria's health systems, ensuring they are resilient and capable of responding to future public health challenges.[21] The certification of Nigeria as polio-free in 2020 was a monumental achievement, reflecting years of concerted efforts by WHO and its partners. However, the recent resurgence of vaccine-derived poliovirus cases is a stark reminder of the need for ongoing vigilance and robust immunisation programs. WHO's continued support and innovative strategies are crucial in sustaining the gains in polio eradication and preventing any resurgence. Lessons learned from Nigeria's polio eradication efforts can impact global health strategies, ensuring that no child worldwide suffers from this debilitating disease again.

Besides the significant milestones achieved with vaccinations against HPV and Polio, the WHO's vaccination programs include routine immunisations for other preventable diseases such as measles, diphtheria, tetanus, and pertussis. These programs have been vital in reducing the prevalence of these diseases and improving overall public health in AMAC. For instance, the measles vaccination campaign in partnership with UNICEF and the Nigerian Government achieved a coverage rate of over 90%, significantly reducing measles outbreaks.[22]

Vaccination Success factors

The success of these vaccination programs can be attributed to several factors ranging from training to monitoring and evaluation processes. For instance, WHO's training programs have equipped local health workers with the necessary skills to administer vaccines safely and effectively. These programs also include training on communication strategies to address vaccine hesitancy and misinformation. The WHO has fostered trust and acceptance of vaccination programs by involving community leaders and influencers. This approach has

[19] Gilmour, S., K. Watanabe, J. Polonsky, and B. Hasler. "Innovative Technologies in Polio Eradication." *Global Health*. 7, no. 4 (2018): pp 56-69.
[20] Burns, C. C., O. M. Diop, R. W. Sutter, and O. M. Kew. "Vaccine-Derived Polioviruses." *The Journal of Infectious Diseases.* 210, Suppl 1 (2014): S283-S293.
[21] Global Polio Eradication Initiative. "Nigeria Declared Free of Wild Poliovirus." (2020)
[22] UNICEF. *Introducing the HPV Vaccine in Nigeria*. (New York: UNICEF, 2023). https://www.unicef.org/nigeria/reports/introducing-hpv-vaccine-nigeria.

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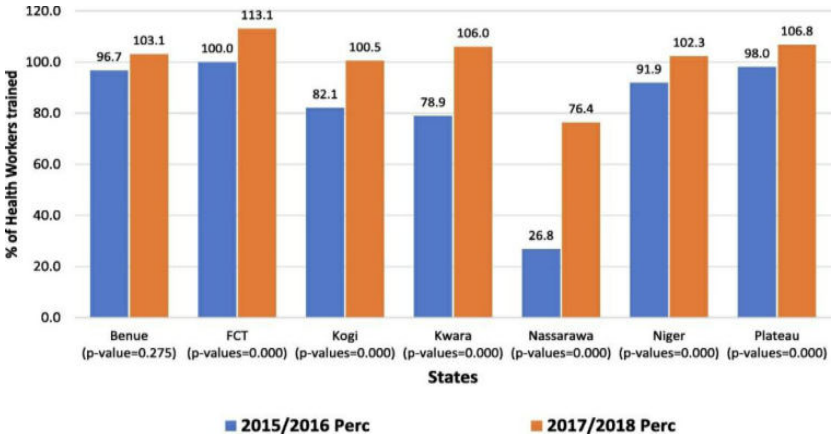
been efficient in culturally diverse and traditionally sceptical communities of AMAC. Also, the WHO employs rigorous monitoring and evaluation techniques to assess the effectiveness of vaccination campaigns. This data-driven approach helps identify areas needing improvement and ensures the efficient allocation of resources. The WHO's collaborative efforts with national and local governments, non-governmental organisations, and international partners have enhanced the reach and impact of vaccination programs.

Fig. 2 shows the proportion of Health Workers trained during the 2015/16 and 2017/18 campaigns in North Central States.



Source: Vaccines Supplement Effort Towards Measles Elimination in Nigeria: Lessons Learnt and Best Practice of the 2017/2018 Measles Vaccination Campaigns

Management/Control of Disease Outbreaks

In the context of disease outbreak management, the effectiveness of WHO's interventions can be further appreciated through visual data, such as that presented in Figure 3. This figure displays the measles vaccination coverage during the 2015/16 and 2017/18 campaigns. The high coverage rates depicted in this figure align with the narrative that WHO's targeted vaccination efforts have been successful in mitigating the spread of measles within AMAC. Substantial as its vaccination efforts might be, WHO also plays a pivotal role in managing and controlling various disease outbreaks in the Abuja Municipal Area Council (AMAC). This section delves into the specific interventions and strategies employed by the WHO during significant outbreaks such as Ebola, Zika, Lassa, and Cholera.

Ebola Disease Outbreak

The Ebola disease outbreak, which primarily affected parts of West Africa between 2014 and 2016, received a substantial response from WHO. Although Nigeria had limited cases, the threat was significant due to the country's size and population density. WHO declared Ebola a Public Health Emergency of International Concern (PHEIC), enabling a coordinated global response. This declaration facilitated the mobilisation of resources and expertise from around

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the world, helping to strengthen Nigeria's health infrastructure and preparedness. In AMAC, WHO's efforts included the establishment of isolation and treatment centres, training healthcare workers on Ebola management protocols, and ensuring the availability of Personal Protective Equipment (PPE). The Organisation's holistic approach addressed immediate health needs and long-term capacity building. After winning the Ebola challenge, Nigeria's health system was better equipped to handle future health emergencies, thanks to the improvements made during the crisis of which the WHO is a part.[23]

Zika Disease Outbreak

Similarly, the Zika virus/disease outbreak 2016 posed a new challenge. WHO's swift action in declaring Zika a PHEIC again underscored the organisation's commitment to global health security. In AMAC, WHO's interventions were also quite robust. They included public health campaigns focused on mosquito control, as the Aedes mosquito was identified as the primary vector for Zika. The organisation also provided technical support for enhanced surveillance and diagnostic capabilities, ensuring that cases were quickly identified and managed.[24]

Lassa Fever Outbreak

During the 2020 Lassa Fever outbreak, the WHO's intervention was multifaceted. Detailed case investigations were a cornerstone of their approach, allowing for precise tracking of the disease's spread, identification and isolation of affected individuals. WHO teams worked tirelessly to update process line listings and provided offsite support to local response teams, ensuring that resources and expertise were available where needed.[25] One of the critical strategies was the mass vaccination campaign as a measure to manage and control further spread. WHO facilitated the rapid deployment of vaccines to high-risk areas, significantly contributing to the halt of the spread of Lassa fever. The campaign included rigorous public health education to encourage vaccination uptake and inform the public about preventive measures. The organisation's ability to mobilise quickly and effectively prevented the outbreak from escalating into a more extensive crisis, representing a significant health crisis management success recorded in AMAC.

The effectiveness of WHO's interventions can be further understood through comparative analysis with other regions and diseases. For instance, the organisation's response to the 2014-2016 Ebola outbreak in West Africa significantly influenced its strategies during the subsequent Zika and Lassa Fever outbreaks; by leveraging lessons learned from previous crises, WHO has been able to refine its approach to disease control and outbreak management, ensuring more rapid and effective responses. In addition to managing

[23] World Health Organization. *Ebola Virus Disease: Democratic Republic of the Congo*. (Geneva: World Health Organization, 2016).
[24] World Health Organization. *Zika Virus Disease in the Americas: Assessing the Outbreak Response and Looking Ahead.* (Geneva: World Health Organization, 2017).
[25] Nigeria Centre for Disease Control (NCDC). *2020 Lassa Fever Outbreak Response Report.* (Abuja: NCDC, 2020).

immediate health crises, WHO's efforts have broader implications for public health in AMAC. The improvements in health infrastructure, capacity building, and public health education contribute to a more resilient health system. This resilience is crucial in a region characterised by diverse health challenges and a high potential for disease spread due to its geographic and demographic characteristics. The WHO's instrumental role in controlling disease outbreaks in AMAC highlights the importance of international collaboration and swift, coordinated responses in managing public health crises. Through detailed case investigations, mass vaccination campaigns, public health education, and long-term capacity building, WHO has significantly improved health outcomes in the region. The lessons learned and the infrastructure improvements made during these outbreaks will continue to benefit AMAC in addressing future health challenges.

Cholera Outbreak Response

The outbreaks of cholera during the rainy season are a recurring issue in the Abuja Municipal Area Council (AMAC). This is exacerbated by seasonal flooding and inadequate sanitation infrastructure. To address these challenges, the World Health Organization (WHO) collaborates with the Nigeria Centre for Disease Control (NCDC) to implement a multi-faceted approach to cholera prevention and control. This collaboration is crucial, as it complements the Nigerian government's efforts at closing the infrastructure gaps. The following section examines the specific strategies employed by WHO and NCDC, their impact on cholera incidence, and the broader implications for public health in AMAC.

WHO and its Health Management Strategies in AMAC

Like many other health emergencies, such as Polio, early detection is crucial for controlling cholera outbreaks. WHO and NCDC have developed robust early warning systems utilising real-time surveillance data to identify potential outbreaks swiftly. This system includes the integration of Geographic Information Systems (GIS) to map hotspots and predict outbreak patterns based on environmental and socioeconomic factors.[26] This predictive capability allows for pre-emptive measures, such as targeted public health interventions in high-risk areas. Another strategy is adopting community health education as a cornerstone of cholera prevention. In that way, WHO and NCDC conduct extensive awareness campaigns to educate the public about cholera transmission, symptoms, and prevention measures. These campaigns are intentionally tailored to local contexts by employing community leaders and influencers to disseminate information effectively. Educational materials, including pamphlets, posters, radio broadcasts, etc., emphasise safe drinking water, proper sanitation, and personal hygiene.[27] Improving public knowledge

[26]Ayuba, H., L. A. Manaf, and A. H. Sabrina. "Environmental Changes and Their Implications on Human Health in Nigeria." *Journal of Environmental Science and Technology.* 6, no. 2 (2013): 70-78.
[27] Oyeniyi, B. "Climate Change and Its Impact on Health in Nigeria." *African Journal of Environmental Science and Technology*. 5, no. 3 (2011): 146-152.

and healthy practices aims to reduce the incidence of cholera significantly in the area of study.

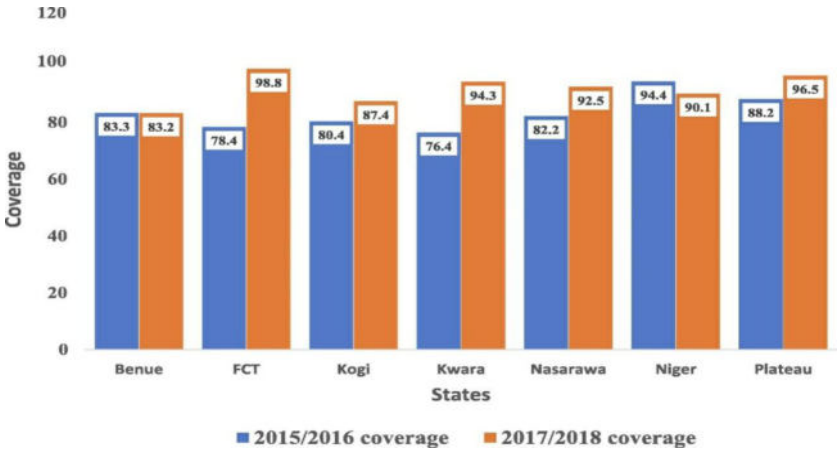
In addition to predictive and preventive strategies, rapid identification and treatment of cholera cases are vital to controlling outbreaks. Therefore, WHO and NCDC deploy trained technical officers to conduct active case searches in affected communities. These officers work closely with local health workers to identify symptomatic individuals, provide immediate treatment, and trace contacts to prevent further spread. This proactive approach curtails the outbreak and builds local disease surveillance and response capacity.[28] Although this approach delivers 'immediate' results, the long-term goal of WHO and NCDC is to build local capacity to manage cholera outbreaks. Training programs for healthcare workers focus on case management, infection control, and outbreak response. These programs are complemented by providing necessary medical supplies, including Oral Rehydration Salts, Intravenous Fluids, and Antibiotics. Establishing treatment centres equipped to handle severe cases ensures that affected individuals receive timely and effective care.[29] Because Cholera control requires a coordinated response across various sectors, WHO and NCDC collaborate with other entities such as government agencies, Non-Governmental Organisations (NGOs), and community groups to address the root causes of cholera outbreaks. This collaboration includes improving water supply and sanitation infrastructure, implementing waste management programs, and enhancing food safety standards. The involvement of multiple stakeholders ensures a comprehensive approach to cholera prevention and control.[30]

Vaccination is a critical component of cholera control strategies. WHO has facilitated the deployment of Oral Cholera Vaccines (OCV) in AMAC, particularly during periods of heightened risk. Reactive vaccination campaigns are launched in response to outbreaks, while preventive campaigns target high-risk populations before the rainy season. Community mobilisation activities support these vaccination efforts to ensure high coverage and acceptance.[31] Monitoring and evaluation are integral to the success of cholera control programs, so WHO and NCDC continuously assess the effectiveness of their interventions through regular data collection and analysis. This feedback loop allows for adjusting strategies based on real-time information and efficient allocation of resources. Lessons learned from previous outbreaks are used to refine and improve future

[28] Obembe, T. A., and K. O. Osungbade. "Primary Health Care in Nigeria: 24 Years After OlikoyeRansome-Kuti's Health System Reform." Nigerian Journal of Medicine 26, no. 4 (2017): 345-355.
[29] World Health Organization. *Guidelines for Environmental Surveillance of Poliovirus Circulation*. (Geneva: World Health Organization, 2019).
[30]Oruonye, E. D., and E. A. Anikemuah. "Water Sanitation and Hygiene (WASH) Services in Nigeria: A Review of the WHO's Intervention and Impact." *Water Resources Management.* 35, no. 6 (2021): pp. 1983-1995.
[31]Ekechi, P. C., C. Nwosu, E. T. Adebayo, and I. F. Adewole. "Reactive and Preventive Cholera Vaccination Campaigns in Nigeria." *Vaccine.* 41, no. 1 (2023): 89-95.

responses.[32] Overall, what is instructive is that available evidence indicates that the combined efforts of WHO and NCDC have significantly reduced cholera incidence and mortality rates in AMAC. The early warning systems and active case searches have enabled rapid response to outbreaks, while community education and vaccination campaigns have built resilience against future occurrences. However, the success of these interventions depends on sustained commitment and collaboration among all stakeholders. The broader implications of these efforts extend beyond cholera control. Improved water and sanitation infrastructure, enhanced health education, and strengthened healthcare capacity contribute to overall public health improvements in AMAC. These initiatives also provide a framework for addressing other infectious diseases and health emergencies, promoting a healthier and more resilient community.

Fig. 3: Measles vaccination coverage for 2015/16 and 2017/18 campaigns in North Central Nigeria



Source: Vaccines Supplement Effort Towards Measles Elimination in Nigeria: Lessons Learnt and Best Practice of the 2017/2018 Measles Vaccination Campaign

COVID-19 Pandemic in AMAC and WHO Response

The COVID-19 pandemic posed unprecedented challenges globally, and the Abuja Municipal Area Council (AMAC) was no exception. The WHO played a critical role in coordinating the response efforts in AMAC, especially in the context of the Internally Displaced Persons (IDP) camps, where the risk of virus transmission was exceptionally high due to crowded living conditions. One of the key strategies employed by WHO was the implementation of extensive public health campaigns. These campaigns aimed to educate the public about COVID-19 prevention measures, such as social distancing, hand hygiene and the

[32]Ngonso A. A. and Egielewa P., "Cholera Outbreak Management and Preparedness in Nigeria: A Case Study of Selected States." *American Journal of Health, Medicine and Nursing Practice*. Vol. 6, No. 1, 2022, pp 18-31.

proper use of face masks. The campaigns were tailored to the local context, considering the cultural and social dynamics of the population in AMAC. Collaborations with local influencers, including community and religious leaders, were pivotal in disseminating accurate information and countering misinformation. These efforts helped to foster a greater understanding of the virus and the necessary precautions to curb its spread.[33] The WHO also focused on enhancing the capacity of healthcare workers in AMAC. Training sessions were conducted to equip healthcare professionals with the latest knowledge and skills to manage COVID-19 cases effectively. This included training on Infection Prevention and Control (IPC) measures, proper use of PPEs, and clinical management of COVID-19 patients. By strengthening the local healthcare ecosystem, the WHO ensured that healthcare facilities could provide adequate care to patients while protecting the health and safety of healthcare workers.[34] Providing essential medical supplies was another critical component of WHO's response strategy. This included the distribution of PPE, such as masks, gloves, and gowns, to healthcare personnel, facilities and IDP camps. Additionally, the WHO supplied medical equipment like ventilators and oxygen concentrators to hospitals in AMAC to support treating severe COVID-19 cases. These efforts ensured that healthcare facilities were robust enough to care for COVID-19 and non-COVID-19 patients.[35]

A significant milestone in the COVID-19 response was the launch of the COVAX initiative, co-led by WHO, GAVI, and the Coalition for Epidemic Preparedness Innovations (CEPI). The initiative aimed to ensure equitable access to COVID-19 vaccines worldwide. Through COVAX, millions of vaccine doses were delivered to Nigeria, including AMAC, significantly boosting vaccination rates. The arrival of vaccines marked a turning point in the fight against the pandemic, providing a critical tool to reduce the spread of the virus and prevent severe illness and deaths. The WHO facilitated the logistics of vaccine distribution, ensuring that even remote and underserved areas in AMAC received adequate vaccine supplies.[36] Addressing vaccine hesitancy was a crucial part of the vaccination campaign. WHO engaged with local communities to build trust and confidence in the vaccines. This involved addressing common misconceptions and fears about vaccines through targeted communication strategies. Community health workers were vital in this effort, leveraging local knowledge and relationships to encourage vaccination uptake. The engagement strategies included door-to-door campaigns, community meetings, and the use of mass media to reach a broader audience.[37] To ensure the effectiveness of the interventions, WHO implemented robust monitoring and evaluation mechanisms. This included tracking vaccination coverage, monitoring Adverse Events Following

[33] World Health Organization. *COVID-19 Vaccination: Strategic Distribution and Equity*. (Geneva: World Health Organization, 2021). https://www.who.int/initiatives/act-accelerator/covax.
[34] Nigeria Centre for Disease Control (NCDC). *2020 Lassa Fever Outbreak Response Report*. (Abuja: NCDC, 2020).
[35] World Health Organization. *Polio Eradication and Endgame Strategic Plan 2019-2023*. (Geneva: World Health Organization, 2020).
[36] World Health Organization. *COVID-19 Vaccination* (2021)
[37] Pate, M. A. "Addressing COVID-19 Vaccine Hesitancy in Nigeria." *The Lancet Global Health.* 9, no. 6 (2021): e746-e747.

Immunisation (AEFI), and assessing the impact of public health campaigns. Data from these activities refined strategies and ensured that resources were utilised efficiently. Regular feedback from the community and healthcare workers also informed ongoing adjustments to the response efforts.[38] The coordinated efforts by WHO and its partners in AMAC yielded significant positive outcomes as vaccination rates increased substantially, reducing COVID-19 transmission and severity of cases. The enhanced capacity of healthcare facilities ensured that patients received timely and appropriate care. Similarly, public health campaigns and community engagement efforts helped to build a more informed and resilient community capable of responding to the pandemic effectively.

Challenges of Health Crisis Management in AMAC and some Recommendations

Despite significant progress, challenges in health crisis management in the Abuja Municipal Area Council (AMAC) still need to be addressed. These challenges include vaccine hesitancy, infrastructure inadequacies, and funding inconsistencies. Vaccine hesitancy, for example, was fuelled by misinformation/cultural beliefs, and those continue to hinder immunisation efforts. In AMAC, misinformation about vaccines, particularly regarding their safety and efficacy, has led to significant public reluctance to participate in vaccination programs. This reluctance is often rooted in deep-seated cultural beliefs and historical mistrust of government-led health initiatives. For instance, the polio vaccine boycott in Northern Nigeria, including AMAC in 2003, was based on unfounded rumours that the vaccine was contaminated with anti-fertility agents.[39] This incident highlighted the critical need for effective communication and community engagement strategies to combat misinformation and promote vaccine acceptance. Engaging local influencers and community leaders who can advocate for vaccination and dispel myths is essential to address vaccine hesitancy. These influencers include religious leaders, traditional chiefs, and respected community members whose endorsements can significantly impact public perceptions and behaviours. Studies have shown that community-based interventions, including educating and empowering local leaders, effectively increase vaccination rates.[40] Furthermore, tailored communication strategies that consider cultural sensitivities and utilisation of local languages can enhance the effectiveness of these interventions.

Enhancing health infrastructure is another critical challenge in AMAC. The existing healthcare facilities often need more essential and up-to-date equipment, medications, and trained personnel. According to a study by Sagir et

[38] World Health Organization. *COVID-19 Vaccination* (2021)
[39]Jegede, A. S. "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" *PLoS Medicine* 4, no. 3 (2007): p 73.
[40] Kaufman, J., A., Synnot, R. Ryan, S. Hill, D. Horey, N. Willis, V. Lin, and P. Robinson. "Face-to-Face Interventions for Informing or Educating Parents About Early Childhood Vaccination." *Cochrane Database of Systematic Reviews* 6, no. 6 (2017): CD010038.

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al.,[41] the spatial distribution of healthcare facilities in Abuja is uneven, with many areas in AMAC experiencing significant gaps in accessibility. This disparity hinders timely and effective responses to health crises such as disease outbreaks. Improving infrastructure involves investing in healthcare facilities, ensuring they are well-equipped and staffed with trained health workers. To support government in addressing the challenge of training health workers, the WHO has provided technical support and training for healthcare professionals in AMAC. However, sustained efforts are needed to build a resilient healthcare system capable of handling emergencies. This includes establishing more primary healthcare centres, upgrading existing facilities, and ensuring a steady supply of medical resources. This is particularly suitable against increasing emigration trends among health workers who relocate mainly to the West and Middle East for greener pastures. One recommendable strategy to close the infrastructure gaps is through international collaboration that targets resources for infrastructure provisioning.[42]

Ensuring consistent funding for health programs is crucial for sustainable health outcomes. Inconsistent funding undermines the continuity of health initiatives and affects the ability to respond to emergencies effectively. Economic constraints and competing priorities within the national budget compound the funding challenges in AMAC. To overcome these challenges, advocating for increased government investment in health and exploring alternative funding sources such as international grants and public-private partnerships is essential. Strengthening financial management within health programs can also enhance resource allocation and utilisation. Transparency and accountability in using funds are vital to maintaining donor confidence and securing long-term financial support. Integrating health programs with other development initiatives optimises resource use and creates synergies. For example, linking health interventions with educational programs can promote broader community health and well-being. The WHO's approach to multi-sectoral collaboration, which involves coordinating efforts across different sectors and stakeholders, has effectively addressed complex health challenges.[43]

To enhance vaccine acceptance in the Abuja Municipal Area Council (AMAC), the WHO should continue to partner with local influencers, religious leaders, and community chiefs to advocate for vaccinations and dispel myths. Local health authorities should identify and engage these leaders, organised community forums and meetings. Media organisations should be encouraged to reinforce the dissemination of culturally sensitive information through local radio, television, and social media platforms.

Deploying new and relevant technologies for disease surveillance is essential. To that end, the WHO should introduce/expand the use of GIS and mHealth

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[41]Sagir, B. A., Y. A. Sani, and M. Saidu. "Geospatial Analysis of Healthcare Facility Distribution in Abuja Nigeria." *International Journal of Health Geographics.* 20, no. 1 (2021): p 25.

[42] Okeke, Tochukwu I., "Sino-Nigerian Relations with particular reference to Oil-for-Infrastructure Diplomacy, 1971-2007; An Appraisal", *Nigerian Journal of Economic History*, Nos. 11 & 12, 2014. pp. 94-123
https://www.ajol.info/index.php/njeh/article/view/155320

[43] World Health Organization. *COVID-19 Vaccination* (2021)

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tools, which local health authorities will integrate and train staff to use and which will be supported by technology providers. To expand telehealth services, the government and regional health authorities should fund and promote these services, with healthcare institutions implementing solutions and technology companies providing infrastructure and technical support.

For multi-sectoral collaboration, the WHO should facilitate coordination between health authorities, educational institutions, NGOs, and international partners. Local health authorities should lead the integration of health programs with other community initiatives. In addition, academic institutions and NGOs should collaborate on combined health and educational projects.

These coordinated efforts will significantly improve public health outcomes in AMAC, ensuring a resilient healthcare system capable of addressing current and emerging health challenges.

Conclusion

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The WHO's interventions in AMAC have significantly improved public health outcomes, demonstrating the importance of international collaboration in health crisis management. While successes such as reduced disease prevalence and improved vaccination rates are evident, challenges like vaccine hesitancy and inadequate healthcare infrastructure persist. Addressing these issues requires a multifaceted approach involving community engagement, enhanced infrastructure, and sustained funding. Innovative strategies and technologies can further improve public health outcomes. Continued support and collaboration are crucial to ensuring that AMAC's health system remains resilient and capable of addressing current and emerging health challenges. The lessons learned from WHO's interventions in AMAC should guide future public health policies and practices, ensuring communities are better prepared for any health emergencies that may arise.

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