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Nigeria, Zoonotic Diseases

**The Uncontrolled Spread of Zoonotic Diseases in Nigeria**

Nigeria is located on the western coast of Africa and is home to about 230.8 million people (“Nigeria”). Due to Nigeria’s healthcare system's lack of coordination and organization, diseases have been able to run rampant through Nigeria allowing it to be one of the top ten countries dealing with zoonotic diseases today (Ihekweazu et al.). With Nigeria’s ever-growing population farmers and ranchers have been tasked with producing more and more food without getting more support from the governmental system for needs such as healthcare (Welcome).

Nigeria has a total area of about 923.8 million hectares, however, only about 33 million hectares are cultivated (Bala). In Nigeria, about 53.52% of the population lives in urban areas and 46.48% of the population lives in rural areas (“Nigeria - Urbanization 2012-2022”). The average farm size in Nigeria is 1.5 hectares or about 3.7 acres leading to a small amount of cultivated land (Food and Agriculture Organization).

Nigeria has a variety of different geographical features including deserts, plains, swamps, mountains, and jungles. Nigeria also has an extensive river system and one of the largest deltas in the world, the Niger Delta. While Nigeria is mostly tropical, the climate gets drier going north. The southernmost region of the country has a monsoon tropical climate, the central region has a tropical savanna climate, and the most northern region has a Sahelian hot and semi-arid climate (“Nigeria”).

The average family size in Nigeria is 4.5 people per household but that does vary across the country (Esri Demographics Team). Nigerian families generally eat two large meals every day along with a light breakfast. The most important and elaborate meal that they eat is the meal that is served around noon. Their breakfast includes yams, bread, cereal, and moi moi. Their lunch includes rice, meat, fish, chicken, spaghetti, fufu, and soups. Nigerian dinner consists mainly of vegetables, fish, stew, plantains, and macaroni (Eisenbraun).

In Nigeria, while primary school is officially free and compulsory, or required, only about ⅔ of school-aged children are attending primary school. Out of those children attending primary school, only about ⅓ of them will make it into secondary school, and even fewer will complete secondary school (“Nigeria”). This severe lack of schooling in Nigeria leads to the most common jobs requiring little to no formal education. The most common jobs in Nigeria include factory workers, driving jobs such as Uber, teaching jobs for those with a formal education, marketing jobs, and farming(Gospel). These jobs have a very low salary leading to high rates of poverty throughout the country.

Nigerian healthcare systems are severely underdeveloped and lack many of the needed resources to be truly effective. Between the high poverty rate, lack of formal education, and low government funding for healthcare, the Nigerian healthcare system is unable to function properly and effectively. Due to the low government funding out-of-pocket costs for healthcare are very high which leaves many people unable to afford healthcare. The Nigerian healthcare system also lacks coordination and organization which impacts their ability to track and prevent zoonotic diseases (Welcome).

Zoonotic diseases are a big issue in Nigeria as it is rated to be one of the top ten countries in the world battling zoonotic diseases (Majekodunmi). In 2017 a tool called the One Health Zoonotic Disease Prioritization Tool was put into place in July, this tool was used to identify diseases as priorities. Rabies, avian influenza, Ebola Virus Disease, swine influenza, and anthrax were seen as the top five diseases that need to be targeted (Ihekweazu et al.). Due to the weak surveillance and disease tracking in Nigeria, many zoonotic diseases go unnoticed by most unless there is a far-reaching economic impact. For example, a 2006 Nigerian outbreak of Avian Flu attracted international attention due to its pandemic possibilities while at the same time an outbreak of rabies, which is highly fatal but also preventable, attracted very little attention leading to a large impact on Nigeria due to these diseases without support from other countries (Ihekweazu et al.).

Zoonotic diseases have a large impact on agriculture in Nigeria. Along with Nigeria being the most populated African country, it also has one of the highest populations of livestock (Ihekweazu et al.). Agriculture is a main employer in Nigeria accounting for 70% of those in the labor force, despite this, agriculture is still majorly under-supported and neglected which leads to issues such as insufficient veterinary care allowing zoonotic diseases to thrive (Gospel). Due to the high population, there is an ever-growing demand for meat in Nigeria leading to an increase in the close contact that handlers have with livestock. This close contact coupled with the low disease-tracking ability and limited access to health care creates the perfect conditions for zoonotic diseases to flourish in Nigeria, especially among the lower class.

Many programs over the years have worked to fix this problem including the Nigeria Centre for Disease Control (NCDC), US Centers for Disease Control and Prevention (CDC), Zoonotic Disease Unit (ZDU) of Kenya, and many others (Welcome). Unfortunately, none of these programs have been successful on their own. In 2017, these programs came together to create the One Health Zoonotic Disease Prioritization Tool, the goal of this was to identify priority zoonotic diseases in Nigeria and to strengthen the links between the human, animal, and environmental health sectors so that they could work in collaboration on zoonotic disease prevention and control. As a result, the top five focus zoonotic diseases were found and it was recommended that the best way to fight against zoonotic diseases was by collaborative efforts between animal and human healthcare providers (Ihekweazu et al.).

Many possible solutions have been suggested to deal with this issue such as the expansion of existing programs such as the One Health Zoonotic Disease Prioritization tool. Still, other solutions need to be introduced to make this tool truly effective. There are three main solutions that when implemented in conjunction with each other could significantly decrease the risk of zoonotic diseases in Nigeria. These solutions are as follows: promoting hygienic practices within the public, introducing proper waste disposal practices, and improving veterinary care. With these programs in Nigeria, the zoonotic disease prevention system would model the United States’ successful system for zoonotic disease control.

The risk of zoonotic diseases can be reduced by educating the public about the importance of good hygiene practices, such as handwashing, proper food handling, and avoiding contact with sick animals. This can be done through community outreach programs, public health campaigns, and school education initiatives. An example of this is ‘Nigeria Roadmap to Hand Hygiene for All (HH4A)’ a program to build upon the hygiene system in Nigeria. While 81% of people in Nigeria acknowledge the importance of hand washing, only about 10% demonstrate proper hand washing using soap and running water (“Nigeria Roadmap”). The goal of the ‘Nigeria Roadmap to Hand Hygiene for All (HH4A)’ program is to combat this issue and teach about the importance of hand hygiene.

The proper disposal of waste is crucial in preventing the spread of zoonotic diseases. This includes using appropriate methods for waste collection, storage, and disposal. In Nigeria, a staggering 41.4% percent of people claimed that they did not have access to proper means for waste disposal such as pit latrines instead using open defecation as their method of waste disposal (C. Sridhar et al.). Of those surveyed who did not have access to proper disposal methods, 90.3% said that they were willing to use other methods of disposal, i.e. pit latrines and improved pit toilets, and the other 9.7% cited money as their reason for their unwillingness to stop open defecation (C. Sridhar et al.). In 2019, the initiative ‘Nigeria Open-Defecation-Free By 2025: A National Road Map’ was launched to end this practice in Nigeria by 2025 (Akindayo). By continuing to use this initiative and continuing to encourage the public to use proper waste disposal methods, the risk of zoonotic diseases will be significantly reduced.

Finally, ensuring that animals receive regular vaccinations, proper veterinary care, and prompt treatment for any illnesses can help prevent the transmission of diseases from animals to humans. This includes implementing effective surveillance systems to detect and respond to animal outbreaks and providing training and resources to veterinary professionals. This can be done through the advancement of programs such as the African Livestock Productivity and Health Advancement (A.L.P.H.A.) initiative which has the aim of bringing improved veterinary care to many places throughout Nigeria and Africa as a whole (“African Livestock Productivity”).

In conclusion, Nigeria is a country that is highly impacted by zoonotic diseases. Nigeria’s zoonotic disease issue could be greatly improved with the implementation of a few different solutions as well as the continuation of the One Health plan which has already been put in place. The solutions that should be implemented in Nigeria include: promoting hygienic practices within the public, introducing proper waste disposal practices, and improving veterinary care.

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## Works Cited

“African Livestock Productivity and Health Advancement A.L.P.H.A. Initiative.” Zoetis, 2024, http://www2.ng.zoetis.com/about-us/alpha-initiative. Accessed 23 February 2024.

Bala, A. “Nigeria - Global Yield Gap Atlas.” Global Yield Gap Atlas, www.yieldgap.org/Nigeria#:~:text=Agriculture%20is%20the%20mainstay%20of,hectares%20is%20currently%20under%20cultivation. Accessed 8 Feb. 2024.

Eisenbraun, Jacqueline. “Nigerian Food: 12 Popular Dishes + 5 Secret Recipes.” Domestic Fits, 7 Aug. 2023, domesticfits.com/nigerian-food/#:~:text=Meals%20Structure,-Meals%20Structure&text=Their%20most%20important%20meal%20is,plantains%2C%20yam%2C%20and%20macaroni. Accessed 9 Feb. 2024.

Esri Demographics Team. “Average Household Size in Nigeria.” ArcGIS Hub, 4 July 2013, hub.arcgis.com/maps/esri::average-household-size-in-nigeria/about. Accessed 9 Feb. 2024.

Food and Agriculture Organization of the United Nations, FAO, 5 Jan. 2022. https://www.fao.org/3/cc0133en/cc0133en.pdf. Accessed 13 Feb. 2024.

“Factory Worker Salary in Nigeria in 2024.” PayScale, www.payscale.com/research/NG/Job=Factory\_Worker/Salary. Accessed 9 Feb. 2024.

Gospel. “20 Most Common Jobs in Nigeria in 2020-2021 [Updated].” Search That Job, 11 Jan. 2021, searchthatjob.com/jobs-in-nigeria. Accessed 9 Feb. 2024.

Ihekweazu, Chikwe, et al. “Prioritization of Zoonotic Diseases of Public Health Significance in Nigeria Using the One-health Approach.” One Health, vol. 13, Dec. 2021, https://doi.org/10.1016/j.onehlt.2021.100257. Accessed 9 Feb. 2024.

Majekodunmi, Ayodele O. “Nigeria’s Pastoralists Face a Triple Burden of Disease Outbreaks, Conflict and Climate Change.” Prevention Web, 12 July 2022, www.preventionweb.net/news/nigerias-pastoralists-face-triple-burden-disease-outbreaks-conflict-and-climate-change#:~:text=Zoonoses%20exert%20a%20huge%20burden,by%20conflict%20and%20climate%20change. Accessed 12 Feb. 2024.

“Nigeria.” Population Clock, 1 July 2023, www.census.gov/popclock/world/ni. Accessed 8 Feb. 2024. “---.” World Bank Climate Change Knowledge Portal, climateknowledgeportal.worldbank.org/country/nigeria/climate-data-historical#:~:text=Nigeria%20is%20characterized%20by%20three,amounts%20from%20south%20to%20north. Accessed 9 Feb. 2024.

“Nigeria.” U.S. Agency For International Development, www.usaid.gov/nigeria/education. Accessed 9 Feb. 2024.

“Nigeria - Urbanization 2012-2022.” Statista, 2 Feb. 2024, www.statista.com/statistics/455904/urbanization-in-nigeria/#:~:text=Urbanization%20in%20Nigeria%202022&text=In%202022%2C%20the%20share%20of,in%20Nigeria%20with%2053.52%20percent. Accessed 8 Feb. 2024.

United States Government Accountability Office. “Federal Actions Needed to Improve Surveillance and Better Assess Human Health Risks Posed by Wildlife.” gao.gov, GAO-23-105238, May 2023, www.gao.gov/assets/d23105238.pdf. Accessed 8 Feb. 2024.

U.S. Department of Agriculture. “Farming and Farm Income.” U.S. Department of Agriculture - ERS, 7 Feb. 2024, www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/farming-and-farm-income. Accessed 9 Feb. 2024.

“USDA Announces Proposed Framework for Advancing Surveillance for SARS-CoV-2 and Other Emerging Zoonotic Diseases Through the American Rescue Plan.” USDA, 24 Aug. 2021, www.usda.gov/media/press-releases/2021/08/24/usda-announces-proposed-framework-advancing-surveillance-sars-cov-2. Accessed 12 Feb. 2024.

Welcome, M. Osain. “The Nigerian Health Care System: Need for Integrating Adequate Medical Intelligence and Surveillance Systems.” Journal of Pharmacy and Bioallied Sciences, vol. 3, no. 4, Jan. 2011, pp. 470–78. <https://doi.org/10.4103/0975-7406.90100>. Accessed 9 Feb. 2024.