Nigeria's Health Security: A situation analysis, forecasts and suggested interventions

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Abstract

Background: With an estimated population of 198 million, Nigeria is the most populous country in sub-Saharan Africa and the seventh globally. Approximately half of the population is aged less than 30 years. The country has a high total fertility rate estimated at 5.5 births per woman. At current rates, Nigeria's population is projected to double by 2050.

Challenges: Poorly controlled population growth poses several potential developmental challenges not only to Nigeria but also to the region, and even beyond. The Nigerian population continues to grow, but the country's land mass and other resources remain relatively fixed with some even depreciating. This scenario underscores the need to plan and take actions to forestall the potential threats and catastrophic consequences of uncontrolled population growth.

Conclusion: This article describes the current situation of the health care systems in Nigeria, provides a SWOT analysis of the system and offers interventions to ensure health security in the country by 2050.

Key words: *Health security, Nigeria, situation analysis, forecasts, intervention*

Abstrait

Contexte : Avec une population estimée à 198 millions d'habitants, le Nigéria est le pays le plus peuplé d'Afrique subsaharienne et le septième au monde. Environ la moitié de la population a moins de 30 ans. Le pays a un taux de fécondité total élevé estimé à 5,5 naissances par femme. Aux taux actuels, la population du Nigéria devrait doubler d'ici 2050.

Défis : Une croissance démographique mal contrôlée pose plusieurs problèmes de développement potentiels non seulement au Nigeria, mais également à la région et même au-delà. La population nigériane continue de croître, mais la masse terrestre et les autres ressources du pays restent relativement fixes et certaines même se déprécient. Ce scénario souligne la nécessité de planifier et de prendre des mesures pour prévenir les menaces potentielles et les conséquences catastrophiques d'une croissance démographique incontrôlée.

Conclusion : Cet article décrit la situation actuelle des systèmes de soins de santé au Nigéria, fournit une analyse SWOT du système et propose des interventions pour assurer la sécurité sanitaire du pays d'ici à 2050.

Mots-clés : Sécurité sanitaire, Nigeria, analyse de la situation, prévisions, intervention

Introduction

The current global population of 7.3 billion is expected to reach 8.5 billion by 2030 and 9.7 billion in 2050 [1]. Most of this increase will occur in the highest fertility countries that are mainly in low and middle-income, with the majority in sub-Saharan Africa [2]. Nigeria will contribute significantly to this rapid projected *population increase.* According to a recent United Nations report, Nigeria's population will surpass that of the United States by 2050, to become the third most populous country in the world [1]. The healthcare system in Nigeria however, is in a deplorable state [3]. This further exacerbates the challenge of caring for such a large population. The need to control Nigeria's population is urgent given the fact that the resources available per capita will continue to reduce as the population grows, underscoring need for interventions to strengthen the health security of the country.

The World Health Organization (WHO), defines health as a "state of complete physical, mental and social well-being and not merely the absence of disease" [4]. Health security is a condition in which the nation and its people are prepared for, protected from, and resilient to events that can adversely impact health status [5]. Therefore health security must encompass issues linked to diseases (communicable and non-communicable) and injuries (intentional and unintentional), social health linked to human behaviours, environment (food, water, sanitation,

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housing, sewage disposal), education (from primary level), mental health linked to environmental stress such as disaster/emergency related issues, security and terrorism, financial and job insecurity among others.

To achieve sustainable development by 2050, Nigeria must attain health security among other important milestones. A healthy population will enable the country harness the demographic dividend of a large youth population (a key feature of the Nigerian population) as healthy lives mean more productivity and the lifting of people out of poverty. A study analysing the effects of eradicating pandemic hookworm and malaria in the USA, showed that children born after the eradication had improved incomes as adults when compared to those exposed to these diseases [6]. Even low-cost health interventions can have large scale effects on population health and this makes health investments a promising policy tool for economic growth in developing countries [7].

In this article, we describe the current situation of the health care system, identify the contributing factors that make it under-perform and how to revamp the system to attain improved health indices in Nigeria.

The current situation of Nigeria's health care system
Like other developing countries, Nigeria has experienced great challenges in health development and delivery. It is therefore unable to meet the health care needs of majority of the citizens. The near collapse of the primary health care system, the growing dual burden of communicable and non-communicable diseases, the widespread prevalence of fake and substandard drugs are some of the indicators of the weaknesses of the health system. This situation clearly indicates that the Nigerian health system is currently not secure. Factors contributory to the current state of health insecurity are poor health awareness and adherence to treatment, insufficient facilities, endemic corruption affecting virtually all sectors in health, the unrelenting brain drain, ineffective regulatory bodies, limited political will or guidance, poor policy implementation, increasing levels of poverty and insecurity.

Currently some interventions, including health sector reform, are being implemented to strengthen the health system. Notable among such interventions is the Economic Recovery and Growth Plan (ERGP), a medium-term plan for 2017-2020 [8], which builds on systematic investment plans aimed at restoring economic growth while leveraging on the ingenuity and resilience of the Nigerian people. It is quite obvious that the economic viability of the country and the health of its people are interdependent. To achieve the goals of the ERGP, strategies suggested are: strong political determination and commitment, deepening the public and private sectors partnership and provision of effective collaboration/coordination with the states and the federal government [8].

Another significant intervention is the second National Strategic Health Development Plan (NSHDP II), which is a well-articulated and robust five-year (2018-2022) road map for policy implementation on improved health and well being of Nigerians [9]. The NSHDP II plan focuses on building enabling environment for the attainment of positive outcomes; increase utilization of essential healthcare services and strengthening of the health system. It also provides health promotion, intervention and prioritization of health burden in the country, risk sharing and protection as well as sustainable healthcare financing. It is inclusive of all the uncompleted projection of the NSHDP I and focuses essentially on universal health coverage, ERGP and the SDGs [9].

Despite existing shortcomings, the Nigerian health system has several strengths and opportunities that can be leveraged to improve function and security. Details of our SWOT analysis of the current health system are shown in Table1. Some strengths of the system are that the bulk of diseases affecting majority of the citizens are preventable; there is an increasing number of trained health care professionals and increased internet coverage that improves general public access to health information. Major weaknesses include inadequate number of specialized healthcare professionals in the country, inadequate health insurance [10] and widespread rural-urban differences in health workforce distribution. Opportunities include availability of global policies and frameworks to guide national programmes while threats are regional insecurity, economic instability, noise, air, water and land pollution (Table1).

Strategic areas that health security should address
Health literacy
Health literacy is critical to health empowerment and it plays a vital role in ensuring the health security of any nation. Stakeholders in the health sector must therefore develop and disseminate health information

Table 1: SWOT Analysis of the Nigerian Health Care System

Strengths	Weaknesses

• Several diseases are preventable and or treatable
• Existing "systems" – e.g. structures, personnel (orthodox/traditional) which can be leveraged to provide healthcare
• Over the large years, specialty training for medical health professionals has generally increased across the nation.
• Increased internet coverage has improved access to online health information.
• Existing linkages with national and international academic, health systems, United Nations Agencies and funding organizations.
• Impressive human resource characteristics
  1. Large pools of expertise in health systems and associated disciplines
  2. A large pool of young and trainable individuals who could potentially contribute to the healthcare workforce
  3. Large population of generally healthy workforce contributing to economy
• Sizeable grey (untapped) economy
	• Near collapse of the primary health care system.
	• Incessant workplace conflicts in health-systems
	  1. Near-continuous industrial actions by healthcare workers occasioned by continued demand for better welfare packages
	  2. Lack of team-based approach (by the professionals) to address health-systems challenges
	• Weak health system which is unable to address the growing dual burden of communicable and non-communicable diseases including injuries
	• Inadequate numbers of specialized healthcare personnel and poorly trained healthcare workers
	• Fake and substandard drugs, poor drug distribution and regulation
	• Healthcare financing is out of pocket in more than 95% of cases with less than 1% national health insurance coverage[10].
	• Poor facilities and infrastructure [e.g. poor transportation, communication, water and electricity supply]
	• Poor retention policies for healthcare workers
	• An escalating rural-urban migration of healthcare workers
	• Lack of enforcement of environmental protection policies
	• Incomplete or inadequate epidemiological (surveillance) data to support an accurate needs assessment
	• Poorly designed and implemented health-system policies that are not directed at the health needs of, and the realities of health care delivery in, the community
	• Limited diagnostics for diseases and lack of coordinated prevention activities
	• Poor prevention/infection control practices both at the community and facility levels

Opportunities	**Threats**
• Available international collaborative health initiatives, programs and development • Leveraging technology (mobile health and telemedicine) for healthcare delivery and reporting • Availability of global policies and frameworks to guide national programs i.e. the SDGs. • Available Public Private Partnership Initiatives for health and development • Leveraging on available expertise and collaborative international efforts on protection of the environmental	• Bureaucracy in the implementation of health-related policies. • Regional insecurity and economic instability. • Corruption, poor funding and lack of political leadership to implement policies and projections • Internal and external migration of the young, healthy and specialized healthcare personnel • Reduction/total stoppage of external donor aid for healthcare services, e.g. the imminent "graduation' of Nigeria from the global vaccine alliance programme. • Food and water shortage will be a threat to nutrition and general health security by 2050

- Climate change/natural disasters/existing climate conditions
- Air, Water, Land and Noise Pollution
- Internal and external migration
- Poor regulatory structures
- Political unrest/civil conflict
- Harmful traditional and social practices
- Increasing levels of poverty
- Declining trust/belief in the nation state, its governance structure and systems
- Unregulated proliferation of non-clinically trained physicians and surgeons

Table 2: Short, Medium, and Long-Term action plans and interventions to promote health security in Nigeria

Plans		Deliverables
Short term (<5 years)	• Improved health literacy • Training and re-training of all categories of health workers • Revamp existing facilities • Make drugs/vaccines of "common" diseases available • Improve health surveillance systems • Provide effective border control to check drug trafficking • Re-introduction of 5 year national development plans which should include policies to attract the private sector into health-system financing and provision • Increase research into health-needs and health-care delivery • Involvement of health-professionals training institutions in formulation and implementation of healthcare delivery policies • Improve structure and function of health-systems regulatory organization • Define goals of health-system and roles of health-professionals in achieving the same • Enlightenment programmes on, and enforcement of environmental protection policies • Enlightenment programmes on the need for population control	• At least 25% of population are health literate. • At least 75% of media outlets run health-related awareness campaigns. • Surveillance should be functional up to 50% • Border control is improved at 50% functionality • Increased interest of private sector in health care, education and delivery • Streamlining policies and activities of health-professionals training and health care delivery institutions • Reduce workplace conflicts in the health-system • Increase information about health-systems needs and operations • Increased awareness and reduced pollution of the environment and the associated diseases • Increasing awareness on the need for population control • Relevant policies and legislation 80% revised and implemented. • Education curricula 100% revised to include health security issues. • Reduced population growth will reduce pressure on land, water and other resources. • Research outcomes should be applied up to 25% • Production of fit-for-purpose and fit-of-purpose health professional and healthcare workers, thereby increasing their employability • Increase employment and retention of healthcare workers and reducing brain drain

Plans		Deliverables
Medium term (5-10 years)	• Revise and implement health care policy • Introduce health security issues into education curricula at all levels • Control population growth by adopting a 1-child policy akin to the Chinese family planning policy of 1979[16]. • Country-based/societal-needs health research should be strengthened • Revise health-training curricula to direct them towards health-system needs and operations • Revise health system policies to better define areas for private sector involvement and investment • Increase private sector involvement in the better-defined areas of the health-system • Strengthen the environmental protection agencies	• Further reduction in environmental pollution and the cost of treating the associated diseases • Children under 5 and the elderly (above 65 years) may receive 100% premium subsidy while children from above 5 years old up to 18 years old may receive up to 50% premium subsidy. Others can get a 25% premium subsidy. • Improve the health and quality of life of 70% of Nigerians • Continue increase employment and retention of healthcare workers and reducing brain drain • Reduce unemployment and workplace conflicts • Improve quality of life and life expectancy • Easier enforcement of environmental protection
Long term (>10 years)	• Develop and implement a robust NHIS • Fully link health-training and health-system needs and operations • Fully strengthen prevention infrastructure. • Eradicate malaria and other neglected tropical diseases • Establish accurate statistics on current diseases burden • Empower citizenry socioeconomically (e.g. job creation and security) • Continue drive to focus government involvement to health systems governance and regulation • Entrench the private sector as a major stakeholder in health-systems financing and operations • Reduce health related mortality and morbidity • Reappraise existing policy • Engendering the culture of environmental protection.	

that is accurate, accessible, and actionable taking into cognizance the language, literacy level, and cultural diversity of Nigeria. The health information should be delivered using appropriate health promotion and education approaches.

Economic stability

The relationship between the economy and health is bidirectional [11], as increased performance of the economy, if the effect is evenly distributed, will enhance household income, improve their welfare, reduce risk of illness, and be able to pay for their health needs. Therefore, securing economic stability for the country is absolutely essential in ensuring health security.

Infectious diseases control

Infectious diseases remain a leading cause of morbidity and mortality in Nigeria. The communicable nature of infectious diseases has made it difficult to eradicate these diseases. Many infectious diseases can be prevented by simple, effective and relatively low-cost interventions. However, policy failure, poor infrastructure and inadequate healthcare workforce have prevented Nigeria from achieving disease control. Nigeria needs to deal with such diseases and eradicate some by 2050.

Reproductive health

Huge gaps still exist in the reproductive health indices of Nigeria. Maternal and perinatal morbidity and mortality, poor contraceptive prevalence rate, unmet need for family planning, high incidences of unsafe abortions and its sequelae and high rates of vesico-vaginal fistula remain a huge burden. With all these in perspective, the fertility rate of the country is still too high for adequate population control, as documented in the 2016/2017 Multiple Cluster Survey [12], and this needs to be urgently checked to prevent a population explosion by 2050.

Drug manufacturing, monitoring and compliance

The facilities and personnel for quality drug manufacturing, distribution and monitoring should be upgraded and their activities well coordinated. Adherence to medication hinges on mental state, access, poverty and education. Therefore there should be restriction of drug sales, with prescriptions necessary for purchase.

Use of psychoactive substances:

This is an important component of health and national security because with increasing rates of use of psychoactive substances there is a concurrent rise in crime rates, road traffic accidents and general insecurity. Currently, Nigeria has evolved from a largely transit nation for psychoactive substances to a high consumption nation [13]. This is likely to worsen over time if there is no rational, deliberate and coordinated plan to halt and reverse this trend. Interventions must focus on behaviour change interventions with a special focus on prevention and mental health promotion activities; training and re-training of staff in regulatory agencies, development and revision of existing policies; as well as better policing and enforcement of access restriction.

Violence, conflicts, humanitarian emergencies and natural disasters:

These all have the similar theme of disorder and chaos, and may be associated with disease occurrence or spread. Successful management of these will depend on the level of preparation, early warning mechanisms and risk assessment and prediction infrastructure put in place.

Oral health

Very few Nigerians have access to oral health care and this is responsible for the high prevalence of oral diseases. Those that have geographical access may not have the financial capability to pay resulting in the high rate of unmet dental needs. Oral health awareness is also poor and interventions for oral health security must include full integration of oral health care services into existing primary health care, a vigorous oral health awareness campaign and a revision of services covered by the National Health Insurance Scheme (NHIS).

Brain drain of health professionals:

Migration of health professionals from developing countries has become a major threat to health security. This brain drain worsens the already depleted healthcare resources in poor countries and widens the gap in health inequities worldwide. In Africa alone, where health needs and problems are greatest, around 23,000 qualified academic professionals emigrate annually [14]. According to NOIPolls, a polling organization, the UK employs approximately 12 new Nigerian doctors per week while 88 percent of these professionals in the West African country are reported to be planning to migrate. This has further worsened the physician-patient ratio in Nigeria from 1:4,000 to 1:5,000, contrary to the World Health Organizations' (WHO) recommended of 1:600 [15]. Other professionals like nurses, medical laboratory scientists and pharmacists are also migrating out of the country. For Nigeria to

achieve health security by 2050, far-reaching steps have to be taken to reverse this trend

Health professionals' education

The quality of the health care in any nation is hinged on the quality of the health care providers. It has been suggested that the primary aim of health professionals' education should be to address the health needs of the population and the systems they serve [16]. Thus the various curricula should be revised to be locally sensitive and globally relevant. The role of this education should go beyond transmission of scientific information to leadership, advocacy, continuous professional development and research. For Nigeria to adequately serve the health needs of its people, existing policies must adapted to achieve the goals mentioned earlier.

Food security

The current level of food insecurity in Nigeria is high. Strategies to increase food production, food processing and preservation, strategic grain/food reserves, market and access, food price control, matching income with inflation rates, involving public-private partnerships, cottage industries enabling environment need to be adopted, adapted, and coordinated to ensure food security on a sustainable basis.

Environmental health

Nigeria has substantial environmental problems. These vary from erosion, drought and desertification, oil pollution from spills to loss of biodiversity, toxic waste from manufacturing industries and e-wastes. All these affect the health of the population in diverse ways. Currently little attention is being paid to waste management, especially that of e-wastes [17]. Urgent attention is needed in this sector to forestall a severely hazardous environment by 2050.

Climate change

The international scientific accord presented by the Intergovernmental Panel on Climate Change confirms that climate change and global warming are undeniable, are happening now, and will continue in the future. Scientific evidence also show that some aspects of climate change and global warming have already caused threats to human health; and that the net global effect of projected climate change on human health is expected to be negative [18]. The impacts of climate change in Nigeria include rising temperatures, more intense and frequent extreme weather events and sea level rise. This could result in increased water and food insecurity, higher exposure to heat stress and ultraviolet radiation, changes in infectious and vector borne disease transmission patterns and an increased threat to coastal communities facing sea level rise [19]. Adequate intervention by the Government and Non-Governmental Organization could help to ensure environmental health security by 2050.

Suggested Plans and Interventions

The challenges undermining the Nigerian health system are deep-rooted. It is unlikely that a single intervention will be sufficient to address these challenges. We therefore suggest short (less than 5 years), medium (5-10 years) and long-term (>10 years) interventions to ensure that health security is achieved in Nigeria by 2050. Details of the specific intervention components and expected deliverables are provided in Table 2.

Short-term: In the short term, there is need for improved health literacy among the citizens, training and re-training of all health workers including emphasis on teamwork and synergy of efforts. Urgent rehabilitation of all existing health facilities in the country is also needed for immediate healthcare impact. Examples of some of the proposed interventions for the medium term are control of the population growth using culturally acceptable means such as the one child-policy adopted by China in 1979 [20], revision of health-training curricula towards health-system needs and operations as well as revision of health system policies to better define areas for private sector involvement and investment.

Medium-term: The place of collaboration between government agencies cannot be overemphasized in achieving these goals e.g. the mission for the Nigeria Centre for Disease Control (NCDC), set over five years (2017-2021) is 'To protect the health of Nigerians through evidence-based prevention, integrated disease surveillance and response activities, using a one health approach, guided by research and led by a skilled workforce' [21]. This agrees with our medium term goals, therefore there must be a forum for discussion and planning together, as a team, so that actions by different health-related agencies are properly coordinated and synergistic. There is need to advance the NHIS to cover all Nigerian citizens comprehensively. Also, malaria and other neglected tropical diseases must be eradicated and our prevention infrastructure strengthened.

Long-term: The role of the educational sector in achieving health security is also pivotal. This sector can use a multi-disciplinary approach including; research and knowledge generation

(evidenced based reports can influence health policy and interventions), teaching and knowledge reproduction (appropriate health curriculum will develop a work force that prevents and solves problems) and community action (this is engendered by increasing community awareness and participation in health matters).

Funding the Interventions
Funding these proposed interventions will require development of innovative strategies. We suggest exploration of multiple funding schemes including community funding such as cooperatives and crowd-funding, government funding through capitation, private sector (including public-private) partnerships, creation of health donor funds and foundations and development of a health solidarity fund (sin tax [22]) in which 1% of profits of companies operating in Nigeria will be pooled into the health fund. This should be increased to 2% of the pump price of petroleum products, and of profits of companies with products that have direct impact on the health of the people e.g. tobacco, alcoholic beverage manufacturers and marketers, mining and petrochemical exploration companies.

Monitoring and Evaluation of Interventions
After implementation, the proposed interventions must be monitored to track progress and modified to ensure they achieve their purpose. There is therefore the need to strengthen the existing national data collection agencies including the National Bureau of Statistics and NCDC. There is also need to adopt the RE-AIM [23] (RE-AIM stands for: Reach your intended target population; Efficacy or effectiveness; Adoption by target staff, settings, or institutions; Implementation consistency, costs and adaptations made during delivery; Maintenance of intervention effects in individuals and settings over time) indicators ([8]) as tools for measurement of health impact, assessing coverage for health services (both geographical and specialty type) and appraising health system outputs (availability, access, quality and safety).

Conclusion
Ensuring health security for Nigeria in 2050 requires multi-sector remodelling of not just the health-systems but also the socio-economic infrastructure. This demands the commitment of government to the execution of these strategies. It also requires a re-orientation of the administrative and technical leadership as well as the security agencies and judiciary. Indeed, the resolve of the government and the determination of the Nigerian people must not wane in the promotion of health and preservation of health security, for this is a pedestal to enhance the socio-economic development of Nigeria.

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