Oral Health in Nigeria

Report on the Situation of Oral Health and Proposed Country-wide Intervention.

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to:

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October 26, 2023.

1.1 Background/Introduction

1.2 Definition of Oral Health

The World Health Organization's (WHO) definition of oral health is *"the state of the mouth, teeth, and orofacial structures that enable individuals to perform essential functions, such as eating, breathing and speaking, and encompasses psychosocial dimensions, such as self-confidence, well-being and the ability to socialize and work without pain, discomfort and embarrassment*"[1]. Oral health issues encompass a variety of diseases and conditions, including dental caries (tooth decay), noma (which predominantly affects children aged 2 to 6), Gum (periodontal) disease, oral cancer, facial injuries (oro-facial/oro-dental trauma), oral symptoms related to HIV infection, as well as cleft lip and palate[1].

Global and Regional Burden of Oral Diseases

As of 2022, the global burden of oral diseases remains a significant public health concern, with 3.5 billion people affected by various oral diseases. This figure represents a 50% increase in cases over the past 30 years[1]. The African continent, particularly the Sub-Saharan African region, faces a substantial burden of oral diseases. In 2019, approximately 480 million people (43.7% of the population) in Africa were affected by oral diseases, marking a troubling increase of 257 million cases over the past three decades[1]. Dental caries (tooth decay) affects a significant proportion of the global population and is considered one of the most common chronic childhood diseases, impacting 60-90% of students worldwide. In Africa, untreated dental caries of permanent teeth were estimated to affect 28.5% of the population aged five years and older in 2019. Furthermore, untreated caries in deciduous (primary) teeth were prevalent, affecting 38.6% of children aged 1-9 years[1]. Periodontal (Gum) Disease was estimated to affect 22.8% of individuals aged 15 years or older in the WHO African Region in 2019. Also, oral cancer, including cancers of the lip, oral cavity, and oropharynx, poses a significant health risk.

Incidence rates vary across countries within the WHO African Region, and these cancers often present as persistent ulcerations, leading to pain, swelling, bleeding, and difficulties in eating and speaking. Oral Manifestations of HIV in the form of lesions occur in 30-80% of individuals with HIV, with variability based on factors like the affordability of antiretroviral therapy[1].

Unfortunately, oral health remains a low priority in many African countries. This lack of emphasis leads to inadequate financial and technical investment in oral health promotion, prevention, and care services. In 2019, approximately 70% of sub-Saharan African countries spent less than $1 per person per year on oral health treatment costs. Furthermore, oral health policies are lacking in many countries, and the region faces a chronic shortage of oral health professionals, with a dentist-to-population ratio far below the global average.

Burden of Oral Diseases in Nigeria

In Nigeria, dental caries affect from 6% to 23% of the population, with a concerning 90% of these cases remaining untreated. Periodontal disease, affects 15-20% of middle-aged adults in Nigeria, and about 15-58% of those aged 15 and above, and can lead to tooth loss. The prevalence of edentulism in people 20+ years is about 1.7%. Oral cancer, which includes cancers of the lip and oral cavity, has an incidence rate of 1.2 per 100,000 population.

Risk Factors in Nigeria

In Nigeria, oral health is low priority to the government. While the prevalence of oral diseases is lower than in some Western countries, the major problem is that most affected persons go untreated. This can be attributed to unaffordability of dental healthcare, insufficient awareness, and a shortage of dental care professionals. As a result, patients often resorting to unskilled personnel and only escalate to a skilled professional when the situation has worsened. Factors such as dietary habits rich in free sugars, poor oral hygiene, and limited fluoride exposure

contribute to dental caries. Periodontal disease, characterized by swollen, bleeding gums and bad breath, is worsened by smoking and poor oral hygiene. Oral manifestations of HIV vary based on the affordability of antiretroviral therapy, affecting undernourished populations more significantly[2–4]. Oral cancers show potential links to risk factors like tobacco and alcohol use, while cleft lip and palate have genetic predispositions and modifiable risk factors such as nutritional deficits and maternal smoking. Poverty amplifies the vulnerability to oral diseases, and this inequality persists across the lifecourse, affecting individuals from early childhood to old age. About 80% of Nigerians live in poverty and are at higher risk of oral diseases, therefore access to oral health services remains inequitable, with services often misaligned with population needs[2,3].

Economic Impact of Oral Diseases in Nigeria

Oral diseases not only impact an individual's well-being but also have broader consequences on society, economics, and healthcare systems. These diseases result in pain, physical disfigurement, emotional distress, social isolation, and, in severe cases, death. The economic burden of oral diseases includes increased household expenditures and reduced quality of life. Nigeria also faces significant economic challenges related to the treatment and prevention of oral diseases[4]. As of 2019, the total expenditure on dental healthcare recorded in the country reached $137 million, with a per capita expenditure of just $0.7, reflecting potential financial barriers to dental care access. Total productivity losses due to 5 oral diseases amounted to $835 million. Additionally, affordability of fluoride toothpaste, a critical component of oral health prevention, proved to be a challenge. As of 2019, it required an average of 1.8 labor days for an average individual to purchase an annual supply of fluoride toothpaste[4].

2.0 The Nigerian Health System

The Nigerian health system has structures at Federal, State, and Local Government levels. At the federal level, the Coordinating Minister for Health and Social Welfare spearheads the coordination of health initiatives, working closely with the Minister of State for Health while the Permanent Secretary provides administrative support. The Federal Ministry of Health comprises 8 departments (headed by Directors), including Food and Drugs Services, Hospital Services, Family Health, Public Health, Health Planning, Research and statistics, Procurement, Reform Coordination & Service Improvement, and Traditional, Complementary & Alternative Medicine, each with specialized functions. Within these departments, multiple divisions operate, including the Legal Services, Public Private Partnership/Diaspora, addressing specific health concerns. Special programs like DHIS2 Nigeria, Better Health For All, Food and Drug Programs, the National Malaria Elimination Programme, the National Tuberculosis Control, the SOML P for R (Saving One Million Lives Program for Results), and the National Cancer Control Programme. Also, there are agencies such as the National Health Insurance Scheme (NHIS), the National Primary Healthcare Development Agency (NPHCDA), the National Centre for Disease Control (NCDC), National Agency for Food and Drug Administration and Control (NAFDAC) and the Nigeria Institute of Medical Research (NIMR)[5].

Sub-National (State and Local Government) Health Structures: Each State has a Commissioner for Health and a Permanent Secretary, as well as Special Advisors to the State Governor on various health/medical-related areas. States tend to replicate the federal health structures in their own jurisdictions. This replication includes departments, programs, and agencies that mirror the federal-level institutions. However, there are variations from state to state based on

specific healthcare needs and resources. Each Local Government (LG) has a Health Department led by the Medical Officer for Health and has staff who have one or more responsibilities at that level including oversight of specific disease control programs, monitoring and evaluation, logistics, finance, planning, nutrition, and social mobilization. To the best of the available knowledge, no department/unit with the Ministry of Health at all levels appears to have dedicated oral health staff[5].

Health Facilities:

Health facilities in Nigeria are categorized into three tiers/levels. The primary level comprises 85.2% of the total facilities, the secondary level includes 14.4% of facilities, while the tertiary level represents only 0.4% of the total[6], as shown the table below:

Table 1: Health Facilities in Nigeria by Level and Type[6].

Tier/Level	Public	Private	Total	Percentage
Primary	27,293	5,627	32,920	85.2%
Secondary	1,196	4374	5570	14.4%
Tertiary	102	51	153	0.4%
Total	28591	10052	38643	

Key Socioeconomic and Health (including Oral Health) Indices

Health outcomes are affected by socioeconomic determinants. Below is a table that captures Nigeria's performance with key socioeconomic indicators, and broad health and oral-health specific indicators. This would also be compared with Uganda's data. , which is very similar to Nigeria in many ways. The Country Similarity Index (CSI)[7], a statistically-based way to measure similarity between countries' considers Uganda is among the top 10 countries similar to Nigeria[7]. CSI compares five major aspects: demographics, culture, politics, technology, and geography, using a combination of 1,000 different data points to reach its conclusions. Uganda's population density (243 per square kilometer) is similar to Nigeria's (246 per square kilometer)[7–9]

Table 2: Health and Socioeconomic Indicators: Nigeria versus Uganda[4,7–9]

Category	Indicators	Nigeria	Uganda
Socioeconomic indicators	Unemployment rate (Year 2022)	5.30%	4.30%
	GDP per capita in USD (Year 2022)	2,445.59	934.90
	Annual Inflation Rate (Year 2023)	26.7%	2.7%
Health and Oral Health indicators	Life expectancy at birth (Year 2021)	52.68 years	62.7 years
	Death rate, crude per 1,000 people (Year 2021)	13.08%	5.88%
	Cause of Death by NCDs (Year 2019)	27.13%	35.55%
	Prevalence of untreated caries of deciduous teeth in children 1-9 years (%) - Year 2019	35.5	38.3
	Prevalence of untreated caries of permanent teeth in people 5+ years (%) - - Year 2019	23.9	24.9
	Prevalence of severe periodontal disease in people 15+ years (%) - - Year 2019	25.1	19.2
	Prevalence of edentulism in people 20+ years (%) - Year 2019	1.7	1.8
	Incidence rate (per 100 000 population) for lip and oral cavity cancer, all ages (2020)	1.2	2.1
	Oral Health Workforce Density per 10, 000 population (2014 - 2019) I. Dentists II. Dental prosthetic technicians III. Dental assistants and therapists	 0.2 0.3 1.0	 0.1 0.0 0.2

The above table shows that Nigeria has a higher unemployment rate and GDP per capita compared to Uganda as of 2022. However, the country faces a much higher inflation rate in

2023 (all-time highest) than Uganda. Uganda has a higher life expectancy, and lower death rate compared to Nigeria. Uganda has a higher proportions of deaths caused by non-communicable diseases compared to Nigeria (as of 2019). Oral health statistics are slight different between the two countries. Both countries have a shortage of dental professionals per 10,000 people, with Nigeria having slightly higher densities in some categories but still facing scarcity.

Oral Health-Care Specific Structures/Mechanisms in Nigeria:

Oral Health Coordination Structure: The 2012 National Oral Health Policy proposed an institutional framework that was never put into action. Suggested structures included a National Oral Health Division and an Oral Health Committee at national level, with replication of similar structures at state, and local government levels. Currently, there is no dedicated staff for nor unit for oral health at the Minstry of health.

Existing Partnerships/Collaborations for Oral Health: The only organization actively supporting oral health, specifically cleft lip and palate diagnosis and treatments/surgeries in Nigeria is a U.S-based charity - Smile Train. Smile Train has worked in Nigeria since 2002[10], and to the best of my knowledge, is partnering with over 80 local hospitals in 34 states in Nigeria to provide free cleft services to children. Currently, Smile Train's work is overseen by working the National **Surgical**, **Obstetric and Anaesthesia** Planning **Committee** of FMoH (initially set up by the Program on Global Surgery and Social Change at the Harvard Medical School, Boston, United States) in 2017[11].

Oral Health-related Policies: There was an outdated national oral health policy in 2012, which seemed to have been grossly underimplemented as there are still no visible structures for oral health in the country[12]. A new national policy and action plan (2021) is still in the drafting stage[4]. Though not intended to directly address oral health, Nigeria has implemented a tax on sugar-sweetened beverages (SSB) that has indirect implications for improving oral health.

Although WHO's Oral Health Profile 2022 highlights that Noma is recognized as a national public health problem in the country[4], there is no available data on what efforts are in place to address it.

Oral Health Service Delivery: Key oral health procedures for detecting, managing, and treating oral diseases are generally not available in primary care facilities in the public health sector. These include basic screening for early detection, urgent and emergency treatment of oral care and pain relief, as well as basic restorative procedures for tooth decay treatment. This demonstrates a significant gap in access to basic oral healthcare in Nigeria, especially since primary healthcare facilities constitute 85.2% of health facilities in the country. As of 2018, there were 4,358 dentists, 6,165 dental Prosthetic technicians, and 19,269 dental therapists and dental assistants in the country (See Table 1 for density per 10,000 population, 2014-2019). This number is quite low to cater to the needs of the very large population (218.5 million as of 2022).[4]

Also, the National Health Insurance Scheme (NHIS) and the Basic Health Care Provision Fund (BHCPF), which are the largest government health financing schemes, only cover routine and preventive oral health care services. Essential, advanced curative, and rehabilitative oral care are not covered by these schemes. More so, only 4% of the Nigerian population are registered NHIS and BHCPF users/beneficiaries. Individuals mostly pay out-of-pocket or through private insurance coverage for oral care[5].

2.0 Strategies to Address Oral Health Challenges

2.1 Global Strategies by the World Health Organization

The World Health Organization (WHO) has been actively addressing global oral health challenges. Specifically for the African region, the WHO African Regional Office developed the Regional Oral Health Strategy 2016–2025[13] to guide Member States in promoting oral health, reducing health inequalities, and addressing oral diseases as part of noncommunicable disease (NCD) prevention and universal health coverage (UHC) by 2030. To implement these strategies, they advocate for political and financial commitment, provide guidance, support oral health services in UHC benefit packages, mobilize resources, promote research, develop workforce models, build capacity, and monitor oral health-related trends. Also, in 2021, WHO Member States adopted a resolution for universal health coverage of oral health services by 2030, leading to the adoption of the Global Strategy on Oral Health at the 2022 World Health Assembly, further emphasizing the commitment to improving oral health worldwide.

2.2 Some Oral Health Interventions in the SubSaharan African (SSA) Region

Table 3: Oral Health Interventions that have been implemented in SSA[14]

Program	Location	Targeted Group(s)	Intervention(s)	Outcomes	Limitations/ Suggested Improvement
Oral health training	Bui Division, Cameroon	Traditional healers	Training workshop	- Increased knowledge	There was limited follow- up after the training
Oral Health Training	Kenya	Nurses, Community health volunteers, and Clinical officers	A one-day Didactic workshop; mentorship support; and use of printed training materials	- Increased knowledge of Oral health - Increased examination, diagnoses, and referrals	Secondary, retrospective data only was extracted
Maternal and child health-focused oral health promotion services	South Africa	Nurses-in-training	Non-specific training on oral health training embedded in the nursing curriculum	Oral health education incorporated as part of integrated health education	The oral health package was not defined There was no follow-up to ascertain program

					effectiveness
Hygiene education and nutrition intervention	Uganda	Nutritionist educators	Non-specific pre-service oral health training	- Increased frequency of toothbrushing - Reduced childhood caries	Presumed oral health training
Transformation of school curriculum to include oral health in primary care	Tanzania	Dental school	- Restructuring of the curriculum to include learning on competencies primary oral care provision	- Increased contact hours in the community	There was no follow-up and evaluation of the intervention
Dental education extended to include practical experience in the rural areas	Nigeria	Undergraduates in dental school	Rural immersion by the students for 6 weeks to gain practical experience	Increased acceptance of oral care activities in communities	Funding was limited
Training of providers (dental hygienists-in-training) on primary oral care.	Multiple countries in sub-saharan Africa (SSA).	Universities and middle level medical colleges	- Trained dental hygienists now serving as primary oral health care providers	- Increased #dental hygienists for primary oral care in the countries	There should be clear legislative restrictions with regards to scope of practice

Several oral health interventions have been implemented in various locations in SSA. In The Gambia, ART training increased provider capacity, but lacked long-term assessment. Cameroon's training for traditional healers improved knowledge, but had limited follow-up. South Africa traditional healers were trained on identifying HIV/AIDS oral manifestations and promoting toothbrush use. In Kenya, training for healthcare workers increased oral health knowledge and diagnoses. South Africa embedded oral health in nursing curriculum while in Uganda, a nutritionist-led intervention increased tooth brushing and reduced early childhood caries. In Gauteng, South Africa, health officers received oral health training, but messaging did

not significantly improve. Nigeria's interdisciplinary education improved nurses' knowledge. Tanzania's curriculum restructuring increased community hours while Nigeria's dental education initiative in rural areas boosted community acceptance and participation. Multiple Sub-Saharan African countries trained dental hygienists to provide primary oral care, emphasizing the need for clear legislative restrictions. Key gaps with most of the interventions were a lack of follow-up and evaluation post-intervention to measure long-term effectiveness and behavioral change.

2.2 Possible Programmatic Responses to Oral Health in Nigeria

Based on evidence-based WHO recommendations, contextual gaps in oral health in the Nigerian health system, and insights from oral health initiatives in different locations in SSA, two program options with distinct focus are being put forth for consideration. See below:

Table 4: Intervention Options

Option A: National Oral Health Governance Initiative (NOHGI)	**Option B:** National Oral Health Workforce Expansion (NOWE)
Focus: Strategic-Level Institutional Strengthening	**Focus:** Workforce Expansion and Capacity Building
Objective: To revive and establish oral health policies, plans, partnerships, and other institutional structures at the national, state, and local government levels. This option focuses on strengthening the strategic-level institutional framework for oral health in Nigeria. The primary goal is to revive and establish policies, plans, partnerships, and institutional structures dedicated to oral health at different levels of governance. This will create a robust foundation for the effective coordination, management, and implementation of oral health initiatives.	**Objective:** To address the gap in the oral health workforce at the primary healthcare level for improved service delivery quality and access. This option prioritizes workforce development and expansion at the primary healthcare level, aiming to enhance the availability and capacity of oral health professionals. The goal is to ensure that qualified healthcare workers are equipped with the knowledge and skills to provide basic oral health services, improving access and quality of care.
Rationale: - Reviving and strengthening oral health	**Rationale:** - A shortage of oral health professionals is a

policies will ensure alignment with global standards and best practices, and guide program direction in terms of resource allocation, and priorities - Establishing an institutional framework will help improve strategic and operational oversight. - By fostering partnerships and collaboration at all levels of government will promote a unified approach to oral health, ensuring that resources and efforts are efficiently coordinated and utilized. - This strategy has proven to be effective in other locations.	critical barrier to delivering effective oral healthcare. Addressing this gap at the primary care level can significantly expand access to services. - Training primary healthcare workers in basic oral health procedures aligns with the WHO's strategy to integrate oral health into primary care and NCD prevention. - By expanding the workforce at the grassroots level, this option enables more Nigerians to receive early detection, urgent treatment, and pain relief procedures, ultimately improving oral health outcomes. - This strategy has proven to be effective in other locations.
Intervention Package Components: **Policy Revival:** Revise, update, and finalize the draft National Oral Health Policy (2021) and develop strategic plans in line with international (e.g. WHO) standards, and contextual realities. **Institutional Framework:** Establish a functional oral health units at the Ministry of Health at national, state, and local government (LG) levels. Also, strengthen partnerships with government and non-government partners to support oral health **Capacity Building:** Train dedicated staff for the oral Health at national, state, and LG levels	**Intervention Package Components:** **Oral Health Workforce Expansion:** Increase the number of dental professionals, such as dentists, dental prosthetic technicians, and dental assistants and therapists, with a focus on primary healthcare. **Training and Education:** Establish training programs and educational initiatives to equip primary healthcare workers with basic oral healthcare knowledge and skills. **Workforce Deployment:** Facilitate the deployment of trained oral health professionals and those in training to primary healthcare facilities, ensuring workforce availability at the grassroots level.

2.3 Prioritization

In a resource-constrained country such as Nigeria, prioritization is essential when considering potential programs to address oral health challenges. The People-Sheps et al (1996) Model, a powerful tool for systematic prioritization, allows us to comprehensively assess and rank the proposed program options based on a set of well-defined criteria. This would help determine the optimal path forward in the mission to enhance oral health across Nigeria at this time. The criteria assessed are in the tables 5 and 6 below:

Table 5: Description of Criterion Scores and Weights Breakdown

Impact on Oral Health Outcomes 1 - Low 2 - Medium 3 - High	Alignment with WHO priorities 0 = Does not align 1 = Aligns	Feasibility 0 - Not feasible 1 - Somewhat feasible 2 - Feasible 3 - Very feasible
Precedence 2- First place 1- 2nd place	Weights Breakdown 1 – Important 2 – More Important 3 – Most Important	

Table 6: Prioritization Matrix for Ranking of the Intervention Options A and B based on the above-listed Range of Criteria Scores and Weights.

Option/ Criteria	Impact on Oral Health Outcomes (3)	Alignment with WHO priorities (3)	Feasibility and Resource Requirements (3)	Precedence (1)	Total
Option A	2x3=6	3x3=9	3X3=9	2x1=2	26
Option B	3x3=9	3x3=9	2x3=6	1x1=1	25

Impact on Oral Health Outcomes: This criterion assesses how effectively each program option is expected to improve oral health outcomes in Nigeria. It considers the potential for reducing oral health issues, improving access to care, and enhancing the overall health of the population. Option B has a more direct impact on health outcomes, since it targets increasing availability and capacity building of the workforce that will provide oral health services to the population.

Feasibility and Resource Requirements: Feasibility evaluates how practical it is to implement each program option, taking into account factors like funding, available resources, and existing infrastructure. It considers the financial and logistical challenges associated with implementation. Option A requires lesser costs, logistics, and infrastructure to implement.

Alignment with WHO Recommendations: This criterion evaluates the extent to which each option aligns with the recommendations and guidelines provided by the WHO for addressing oral health challenges. Both options A and B align with the WHO recommendations.

Precedence: Precedence refers to the logical order in which program options should be implemented. It assesses which option should logically come first in a sequence of actions to ensure effective program development. Option A - which is establishing a governance and coordination structure should logically precede any other intervention. This would help to promote ownership and sustainability of oral health intervention efforts in the country.

Based on the above criteria, the choice intervention would be Option A - The National Oral Health Governance Initiative (NOHGI)

2.4 The National Oral Health Governance Initiative (NOHGI)

2.4.1 Introduction: The National Oral Health Governance Initiative (NOHGI) is a comprehensive program designed to establish a robust institutional framework for oral health in Nigeria. This initiative recognizes the critical need for governance, policies, and structures to effectively address oral health challenges, align with global standards, and ensure the long-term sustainability of oral health programs. NOHGI aims to lay the foundation for coordinated and efficient oral health initiatives at the national, state, and local government levels.

2.4.2 Theoretical Framework for NOHGI

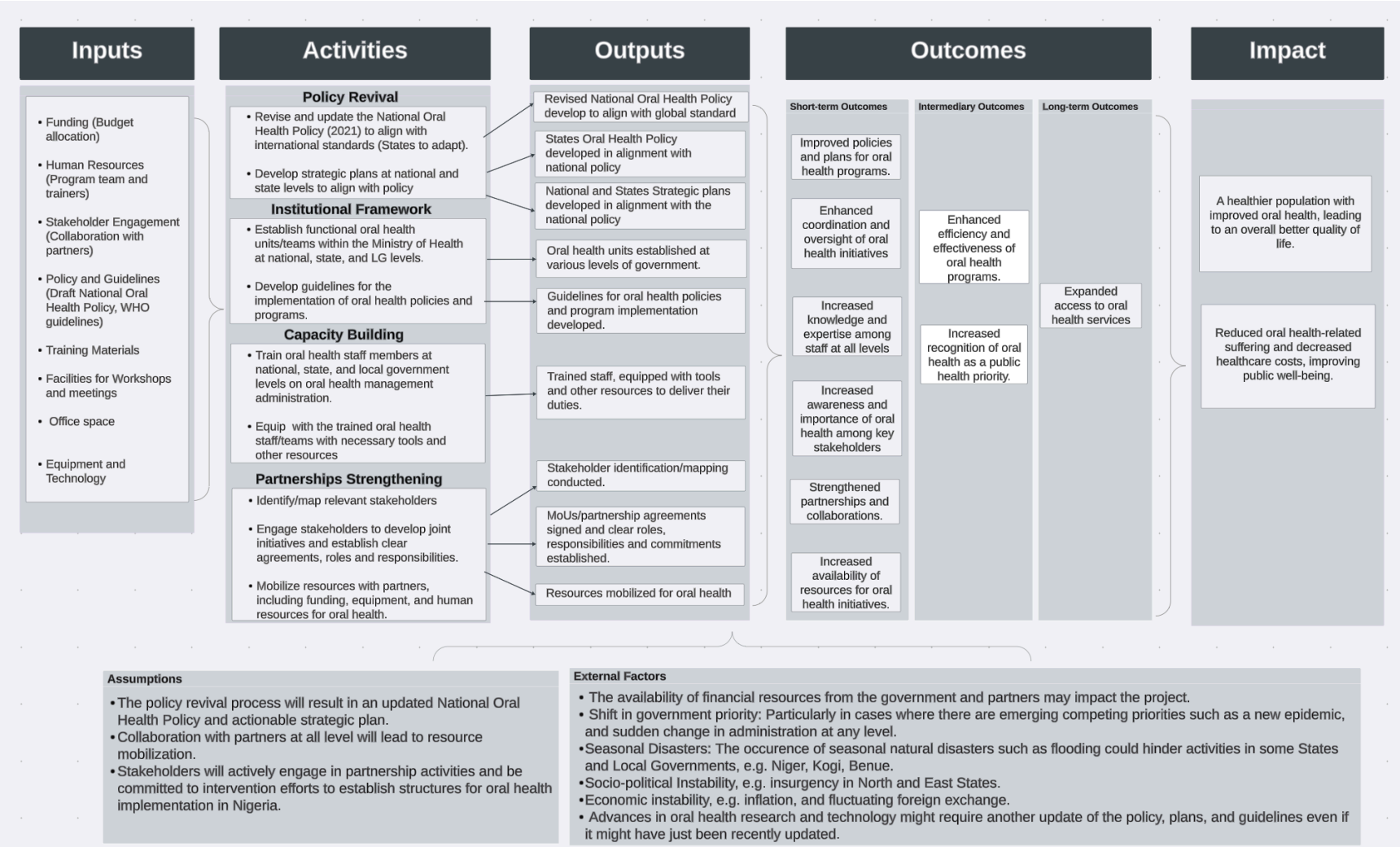
The theoretical framework for NOHG) draws from a combination of two key theories: Institutional Theory and Stakeholder Theory. Institutional Theory recognizes that NOHGI operates within the societal and cultural constraints of the Nigerian healthcare system[15,16]. It acknowledges the importance of aligning the proposed oral health governance framework and structures with the established Nigerian healthcare system, regulations, and cultural expectations to ensure its seamless integration and acceptance[15,16]. This would be complemented by the Stakeholder

Theory which emphasizes the significance of acknowledging and addressing the interests of diverse stakeholders including government bodies, non-governmental organizations, and international partners, and promoting collaboration and resource utilization[17].

2.4.3 Logic Model

The logic model below outlines key inputs, activities, outputs, outcome, and impact of NOHGI. Inputs required include resources such as funding allocation and release by the government, human resources, partnerships/collaborations, existing policies and guidelines, equipment and technology. Key activities include reviving the national policy and developing a strategic plan, establishing an institutional framework, and strengthening partnerships for overall health to create an enabling environment for subsequent oral health service delivery interventions to thrive. See figure below:

Table: Logic Model



2.4.4 Intervention Plan

NOHGI will be a 2-year project from January 2024 to December 2026. It will have 4 intervention stragy domains, each with an aim and activities as outlined below:

Domain #1: Institutional Framework

Aim: Establish functional oral health units at the Ministry of Health at national, state, and local government (LG) levels.

Key Activities: To achieve the above aims, the following activities will be conducted, and will be handled by the various consultants

- Recruitment of long-term consultants, including M&E, technical/planning, and finance consultants, to support oral health unit establishment, partnership strengthening efforts, capacity building, and evaluation at the federal, state, and local government levels.
- Consultants will work with the Director Public Health and Minister for States/Commissioners for Health in identification and appointment of a dedicated team for the establishment of oral health units at the Ministry of Health at the national, state, and local government levels.
- Consultants will lead the development of a comprehensive coordination framework, plan, guidelines, and terms of reference for these units, outlining their structure, functions, and responsibilities.
- Physical setup of the oral health units at national, state, and local government levels, will be done including the allocation of office space, equipment, and the recruitment of necessary personnel.
- As part of their responsibilities, oral health units at federal, state, and local government levels will hold monthly coordination meetings. They would conduct routine supervision of oral health activities and service delivery efforts in their areas of jurisdiction. The M&E officers will

conduct monthly reporting of data on oral health by M&E officers to the central health sector repository - DHIS2.0.

Domain #2: Capacity Building:

Aim: Develop the capacity dedicated staff for oral health at national, state, and LG levels to ensure effective coordination and oversight.

Activities: Development of a tailored training program for staff by the consultants within the newly established oral health units at the national, state, and local government levels. The program will cover areas such as oral health program management, administrative functions, and coordination.

Domain #3: Partnership Strengthening:

Aim: Strengthen partnerships with government and non-government entities to support oral health initiatives.

Key Activities: An oral health committee - an multidisciplinary team of stakeholders comprising representatives from partners, donors, line ministries, departments, and agencies will be setup at Federal and State levels. The committee will hold quarterly meetings of the oral health committees to discuss progress of oral health institutional framework establishment efforts, resource mobilization, and next steps on strengthening workforce capacity and service delivery. They will also work with the consultant in ensuring policy revival and strategic plan development.

Strategy Domain #1: Policy Revival

Aim: Revive and finalize the National Oral Health Policy (2021) to align with international standards and contextual realities.

Activities:

- Conduct of a 5-day workshop to do an in-depth review of the existing National Oral Health Policy (2021) and analyze gaps, and areas requiring revision in alignment with WHO and national/state context.
- Update/finalization of the draft National Oral Health Policy (2021) to ensure alignment with international standards, best practices, and contextual realities in a 5-day workshop.
- Development of strategic plans through a 10-day strategic plan development workshop based on the revised policy. Plans are tailored to the specific needs and challenges of each level, including the national, state, and local government levels.
    - Validation of the revised policy and strategic plans through consultations with key stakeholders, such as oral health experts, government officials, and relevant organizations.

Evaluation Activities: These activities will ensure that the fidelity and effectiveness of the project are actively measured. The following evaluation activities will be conducted:

- Baseline situation analysis (Rapid) conducted at the beginning of the project to establish baseline data for future comparisons.
- Periodic (6-monthly program reviews) to track the level of progress with plans, including the end of the 2-year initiative evaluation to measure outputs.
- Outcome evaluation after the 2-year period to assess changes in the oral health system/structures and the effectiveness of the initiatives to provide insights for program scaling.

Table: Project Timeline

CODE	Activities	Level Implemented	2024												2025											
			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4		
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1.0	**Institutional Framework**																									
1.1	Recruitment of consultants, - M&E, technical/planning, Finance consultants to work long-term (for the 2-year period to support oral health unit establishment, partnership strengthening efforts, capacity building, and evaluation	Federal, State, LG																								
1.2	Identify and appoint a dedicated team for the establishment of oral health units at the Ministry of Health at the national, state, and local government (LG) levels.	Federal, State, LG																								
1.3	Develop a comprehensive coordination framework, plan, and guidelines, and terms of reference for these these units, outlining their structure, functions, and responsibilities.	Federal, State, LG																								
1.4	Physical setup of the oral health units a national, state, and LG levels, including the allocation of office space, equipment, and the recruitment of necessary personnel.	Federal, State, LG																								
2.0	Capacity Building and Training																									
2.1	Develop a tailored training program for staff within the newly established oral health units at the national, state, and local government levels. The program should cover areas such as oral health program management, administrative functions, and coordination.	Federal, State, LG																								
3.0	**Policy Revival**																									
3.1	**Comprehensive Policy Review and Finalization**																									
3.1.1	Identify/Map a multi-disciplinary policy review/development team, including oral health experts, healthcare professionals, and policymakers (This will be done by Consultants and Oral health unit members)	State & Federal																								
3.2	Inaugurate the multidisciplinary team of stakeholders as oral health committee at Federal and Stae levels to support program in advisory and oversight functions (1-day inauguration) - 25 persons per State/Federal	State & Federal																								
3.1.2	Conduct a 5-day workshop to do an in-depth review of the existing National Oral Health Policy (2021). Analyze gaps, and areas requiring revision in alignment with WHO and national/State context (25 persons)	State & Federal																								
3.1.3	Update/finalize the draft National Oral Health Policy (2021) to ensure alignment with international standards, best practices, and contextual realities in a 5-day workshop (25 persons) - Per State/Federal	State & Federal																								

CODE	Activities	Level Implemented	2024												2025												2026					
			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2		
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
3.2	**Development of Strategic Plans**																															
3.2.1	Conduct a 10-day strategic plan development workshop based on the revised policy. Ensure that the plans are tailored to the specific needs and challenges of each level, including the national, state, and local government levels - 25 persons per State/Federal	State & Federal																														
3.2.2	Validate the revised policy and strategic plans through consultations with key stakeholders, such as oral health experts, government officials, and relevant organizations (5-day consultation meeting/workshop) - 30 persons per State/Federal	State & Federal																														
4.0	**Coordination/Monitoring and Partnership Strengthening Activities:**																															
4.1	Monthly meeting of Oral health units at Federal, State and LG levels	Federal, State, and LG levels																														
4.2	Quarterly meetings of the oral health committees to discuss progress of oral health institutional framework establishment efforts, resource mobilization, and next steps on strengthening workforce capacity and service delivery	Federal, State, and LG levels																														
4.3	Routine supervision of oral health activities and service delivery efforts in their areas of jurisdiction.	Federal, State, and LG levels																														
4.4	Monthly reporting of data on oral health by M&E officers to the central health sector repository - DHIS2.0	Federal, State, and LG levels																														
5.0	**Evaluation Activities**																															
5.1	Baseline situation analysis (Rapid) will be conducted at the beginning of the project, led by the M&E consultants at State and Federal Levels to establish baseline data for future comparisons	Federal, State, and LG levels																														
3.2	Periodic (6-monthly program reviews) will be conducted to track level of progress with plans, including the end of the 2-year initiative evaluate to measure outputs.	Federal, State, and LG levels																														
3.3	Outcome evaluation would be conducted to see any changes that have occurred in the oral health system/structures and if the initiatives were effective to provide insights for program scaling.	Federal, State, and LG levels																														

Staffing Plan

NOGHI will be leveraging existing human resource personnel at the Federal, States, and LG levels. They would be deployed from other units/departments. Where slots cannot be filled internally, the FMoH will request for recruitment of such officials through the Federal Civil Service Commission. At the Federal, the oral health unit will comprise the following personnel: National Oral Health Coordinator, Prevention Officer, Case Management Officer, Advocacy, Communication & Social Mobilization Officer, and M&E Officer (Technical Team). Other support Staff: Finance, Administrative, HR, Procurement coordinators and Driver. This same structure will be replicated in the 37 States across the country. Across the 774 Local Government Areas, the oral health teams will include a focal person who would be working full-time. Other LGA Health Department Staff that would work part-time to support NOHGI are the existing Medical Officer of Health, Planning Officer, Logistics Officer, Social Mobilization Officer, and Driver.

Consultants (Long Term), 2 per State, and 2 at the Federal each would include Technical Consultants, Costing/Financial Consultants, and Monitoring and Evaluation Consultant. They would provide technical assistance for policy revival, institutional framework, capacity building, and partnership strengthening aspects of NOHGI (See Budget/Budget Justification).

Adoption, Implementation, and Sustainability Plan

NOHGI in itself is an intervention that focuses on creating an enabling environment and solid structure for adoption, implementation, and sustainability of oral health initiatives country-wide.

The Federal Ministry of Health would lead the initiative and foster partnership/collaboration with key stakeholders, including other government agencies, international partners, and non-governmental organizations to secure their commitment and mobilize resources for the initiative. Also, the oral health policy 2021 will be revived and finalized as well as integrated into the broader healthcare system. A strategic plan and guidelines will be developed to guide implementation focus at all levels. Also, the

institutional framework for NOHGI would be established through setup of an oral health unit and oral health committees/partners' forums. Relevant personnel trained and equipped at Federal, States, and Local Government levels. The initiative will be continuously monitored and evaluated to ensure long-term effectiveness.

Evaluation Plan

Scope: There will be 3 types of evaluations - a baseline situation analysis prior to inception of the intervention. Process evaluation will be conducted at intervals throughout the 2-year period of the NOHGI intervention, and the outcome evaluation would be conducted 2-years after initial implementation timeline. The evaluation will cover all four domains of NOHGI: Policy Revival, Institutional Framework, Capacity Building, and Partnership Strengthening.

The table below details the process and outcome evaluation questions, methods, indicators, and data sources. The evaluation will be led by the Monitoring and Evaluation consultants (2 per State x 37 States; and 2 at the Federal level).

Table 7: Process and Outcome Evaluation

Process Evaluation	Outcome Evaluation

<table>
<tr>
<td>Questions:
1. Are the oral health units at the federal, state, and local government levels successfully established and functioning according to the NOHGI plan?
2. Have oral health policies been revised and updated as per NOHGI objectives?
3. Is the training of staff members at different government levels effectively conducted?
4. Are partnerships with government and non-government entities strengthened as intended?</td>
<td>Questions:
1. To what extent has the revision of the National Oral Health Policy improved alignment with international standards and best practices?
2. Have the strategic plans based on the policy effectively guided the implementation of oral health initiatives?
3. Are oral health units adequately planning, coordinating, and overseeing oral health programs and services?
4. What is the level of resource mobilization for oral health?</td>
</tr>
<tr>
<td>Indicators/Data source:
1. Percentage of Oral Health Units Established
- Data Source: NOHGI program records and documentation.

2. Oral Health Policy Revised and Finalized
- Data Source: Reports of policy revisions and updates, existing WHO and related national policies.

3. # Staff trained on oral health at Federal, State and LGA levels
- Data Source: Training records, certifications, and program reports.

4. #Partners' MOUs signed
- Data Source: MOUs, meeting records.</td>
<td>Indicators/Data Source
1. Percentage increase in policy alignment with international standards
- Data Source: Document analysis report of revised policies compared to international standards.
2. Effectiveness in the use of strategic plans, policy and guidelines.
- Data Source: Document analysis of strategic plans and program reports.
3. Improved coordination of oral health efforts
- Data Source: Stakeholder surveys, interviews, available trained and well-equipped staff in key thematic areas at all levels
4. Sustained increase in resources and established funding mechanisms for oral health.
- Data Source: Records of partnership activities, oral health budget allocation in health budget, expenditure reports, resource mobilization reports, and stakeholder interviews</td>
</tr>
<tr>
<td colspan="2">Assumptions:
- Resources will be made available for program implementation and evaluation
- Relevant stakeholders will cooperate with the processes.
Limitations:
- Potential biases in self-reported data and constraints in accessing specific records.</td>
</tr>
</table>

Budget Overview

The NOHGI budget is a 2-year budget. It captures budget lines such as annual salaries, consultants fees, fringe benefits, activity costs, other direct costs, and overhead costs. Applicable increments such as annual salary increment (applied on salaries only). All costs were estimated based on publicly available data for the country on each of the line/sub-line items. See budget summary on the table below. Please note that the salaries (48% of the budget) and benefits (12% of the budget) are not the direct responsibility of the Federal Ministry of Health. They would be handled centrally by the Federal, State, and Local Government Civil Service Commissions alongside other government employees' compensations.

Table 8: Budget Summary, NOHGI

Line Item	**Year 1 (Naira)**	**Year 2 (Naira)**	**Total (Naira)**	**USD**	**%**
Salaries	7,520,895,904	7,671,313,822	15,192,209,726	18,914,368	48%
Consultants	1,573,200,000	1,573,200,000	3,146,400,000	3,917,282	10%
Benefits (25%)	1,880,223,976	1,917,828,456	3,798,052,432	4,728,592	12%
Activity costs	213,930,000	102,284,910	235,484,910	293,180	1%
Other direct Costs	2,686,830,000	237,891,920	2,924,721,920	3,641,292	9%
Overhead Costs	3,468,769,970	2,875,629,777	6,324,217,247	7,873,678	20%
Grand Total	**17,343,849,850**	**14,378,148,885**	**31,621,086,235**	**39,368,392**	

Table 9: Budget for NOHGI

	YEAR 1					YEAR 2	GRAND TOTAL	GRAND TOTAL
	UNIT COST (₦)	MEASURE	#MEASURE	# UNITS	TOTAL(₦)	TOTAL(₦)	(₦)	(USD)
A. SALARIES (ANNUAL)								
Oral Health Unit (Federal)								
National Coordinator	6,326,604	LOE	100%	1	6,326,604	6,453,136	12,779,740	15,911
National Oral Health Prevention Officer	4,255,064	LOE	100%	1	4,255,064	4,340,165	8,595,229	10,701
National Oral Health Case Management Officer	4,255,064	LOE	100%	1	4,255,064	4,340,165	8,595,229	10,701
National Oral Health Advocacy, Communication & Social Mobilization Officer	4,255,064	LOE	100%	1	4,255,064	4,340,165	8,595,229	10,701
National Oral Health M&E officer	4,255,064	LOE	100%	1	4,255,064	4,340,165	8,595,229	10,701
Support Staff (Federal)								
Finance Coordinator	4,255,064	LOE	20%	1	851,013	868,033	1,719,046	2,140
Administrative Coordinator	4,255,064	LOE	20%	1	851,013	868,033	1,719,046	2,140
Human Resource Coordinator	4,255,064	LOE	20%	1	851,013	868,033	1,719,046	2,140
Procurement and Logistics Coordinator	4,255,064	LOE	20%	1	851,013	868,033	1,719,046	2,140
Driver	1,325,372	LOE	100%	1	1,325,372	1,351,879	2,677,251	3,333
Oral Health Unit (State)								
State Coordinator	6,326,604	LOE	100%	37	234,084,348	238,766,035	472,850,383	588,701
State Oral Health Prevention Officer	4,255,064	LOE	100%	37	157,437,368	160,586,115	318,023,483	395,941
State Oral Health Case Management Officer	4,255,064	LOE	100%	37	157,437,368	160,586,115	318,023,483	395,941
State Oral Health Advocacy, Communication & Social Mobilization Officer	4,255,064	LOE	100%	37	157,437,368	160,586,115	318,023,483	395,941
State Oral Health M&E Officer	4,255,064	LOE	100%	37	157,437,368	160,586,115	318,023,483	395,941
Support Staff (State)								
Finance Coordinator	4,255,064	LOE	20%	37	31,487,474	32,117,223	63,604,697	79,188
Administrative Coordinator	4,255,064	LOE	20%	37	31,487,474	32,117,223	63,604,697	79,188
Human Resource Coordinator	4,255,064	LOE	20%	37	31,487,474	32,117,223	63,604,697	79,188
Procurement and Logistics Coordinator	4,255,064	LOE	20%	37	31,487,474	32,117,223	63,604,697	79,188
Driver	1,325,372	LOE	100%	37	49,038,764	50,019,539	99,058,303	123,328
Oral Health Unit (LG Level)								
LGA Oral Health Focal Person	4,255,064	LOE	100%	774	3,293,419,536	3,359,287,927	6,652,707,463	8,282,650
Other LGA Health Department Staff								
Medical Officer of Health	6,326,604	LOE	20%	774	979,358,299	998,945,465	1,978,303,764	2,462,997
Planning Officer	4,255,064	LOE	20%	774	658,683,907	671,857,585	1,330,541,493	1,656,530
Logistics Officer	4,255,064	LOE	20%	774	658,683,907	671,857,585	1,330,541,493	1,656,530
Social Mobilization Officer	4,255,064	LOE	20%	774	658,683,907	671,857,585	1,330,541,493	1,656,530
Driver	1,325,372	LOE	20%	774	205,167,586	209,270,937	414,438,523	515,978
Subtotal-Salaries (ANNUAL)					**7,520,895,904**	**7,671,313,822**	**15,192,209,726**	**18,914,368**

	YEAR 1					YEAR 2	GRAND TOTAL	GRAND TOTAL
	UNIT COST (₦)	MEASURE	#MEASURE	# UNITS	TOTAL(₦)	TOTAL(₦)	(₦)	(USD)
B. CONSULTANTS (LONG TERM)								
Technical Consultant	6,900,000	Year	100%	76	524,400,000	524,400,000	1,048,800,000	1,305,761
Costing/Financial Expert/Consultant	6,900,000	Year	100%	76	524,400,000	524,400,000	1,048,800,000	1,305,761
Monitoring and Evaluation Consultant	6,900,000	Year	100%	76	524,400,000	524,400,000	1,048,800,000	1,305,761
Subtotal-Consultants					**1,573,200,000**	**1,573,200,000**	**3,146,400,000**	**3,917,282**
C. BENEFITS								
Fringe Benefits				25%	1,880,223,976	1,917,828,456	3,798,052,432	4,728,592
Subtotal-Benefits					**1,880,223,976**	**1,917,828,456**	**3,798,052,432**	**4,728,592**
D ACTIVITY COSTS								
Training workshops	30,000	Person		4,440	133,200,000	0	133,200,000	165,835
Meetings (policy revision, strategic plan, guidelines development)	10,000	Person		1,711	17,110,000	21,678,370	21,678,370	26,990
Assessments/Evaluation activities	125,000	Person		444	55,500,000	70,318,500	70,318,500	87,547
Communications resources and fees	10,000	Month		812	8,120,000	10,288,040	10,288,040	12,809
Subtotal-Activity costs					**213,930,000**	**102,284,910.00**	**235,484,910.00**	**293,180**
E OTHER DIRECT COSTS								
Facility management contribution (utilities, janitorial, security, internet, equipment and furniture maintenance, and other services) - Federal and State	43,000,000	Year	10%	38	163,400,000	207,027,800	370,427,800	461,184
[illegible] office	43,000,000	Per Office	10%	38	163,400,000	0	163,400,000	203,434
Office Supplies contribution (Federal and State)	1,200,000	Year	1	38	4,560,000	10,288,040	14,848,040	18,486
Office Supplies contribution (LG Level)	600,000	Year	1	774	464,400,000	10,288,040	474,688,040	590,989
Vehicle procurement (Federal and States only)	48,515,000	Vehicle	1	38	1,843,570,000	0	1,843,570,000	2,295,253
Vehicle maintenance (Federal and States only)	250,000	Month	1	38	9,500,000	10,288,040	19,788,040	24,636
Printing (Large scale) - policies, guidelines,plans	5,000	Booklet	200	38	38,000,000	0	38,000,000	47,310
Subtotal-ODC					**2,686,830,000**	**237,891,920**	**2,924,721,920**	**3,641,292**
TOTAL DIRECT COSTS					**13,875,079,880**	**11,502,519,108**	**25,296,868,988**	**31,494,714**
OVERHEAD				**25.00%**	**3,468,769,970**	**2,875,629,777**	**6,324,217,247**	**7,873,678**
GRAND TOTAL					**17,343,849,850**	**14,378,148,885**	**31,621,086,235**	**39,368,392**

Budget Justification

Inflation: The inflation rate of 26.7% in Nigeria has been applied to the activity costs and other direct costs sections of the budget to ensure that the program remains financially feasible even with fluctuations in market prices. Inflation was not applied to salaries as this has not been the practice with the Federal civil service system.

Annual Salary Increment (Health) (2%): An annual salary increment of 2% has been included to account for salary adjustments in line with the civil service increment rate for the health sector.

Current Foreign Exchange Rate, Naira to USD (803.21): The entire budget is costed in local currency (Naira). This has also been converted to the dollar (USD) equivalent for the benefit of foreign partners, using the current exchange rate of 803.21 Naira to 1 USD.

SALARIES: The budget includes annual net salaries for a range of positions at the federal, state, and local government levels in line with the Nigeria Civil Service Commission salary structure. Note that employees at the same grade/level earn similar amounts irrespective of their area of jurisdiction (e.g. Federal, State, or LG levels). The coordinators at National, State, and Local Government levels will be Directors on Grade Level 17 Step 9 will work full-time and will be responsible for overall program management at their levels. They would receive a salary of N6,326,604. The oral health prevention, case management, Advocacy, Communication and Social Mobilization, and M&E officers will be overseeing prevention, clinical/case management, public awareness and communications, monitoring and evaluation activities respectively. They would be Officers on Grade Level 14 and at 100% Level of Effort (LOE) - full-time with an annual salary of N4,255,064. All support staff, including finance, HR, administration, and logistics officers would provide 20% LOE, with the exception of Drivers at State and Federal level whose LOE is 100%. Drivers will be Officers on level 06 Step 15, with an annual salary of N1,325,372.

CONSULTANTS: Long-term consultants will provide specialized expertise to the program, in planning, capacity building, and M&E activities, to enhance effectiveness and efficiency. Their fees (budgeted

annually at N6,900,000 each) have been budgeted to secure their services for the duration of the program. Consultants will be response for setup of the oral health unit, setup of oral health committees, support policy revival, training, and partnership strengthening efforts. 2 Consultants will be engaged per State (locally) and 2 at the Federal level per specialty area (e.g., M&E and Finance), totalling 76 across the country, and would work remotely with one another (with no need for travels to manage costs) to ensure alignment of efforts across levels.

BENEFITS (Fringe Benefits - 25%): Employee benefits, including health insurance, retirement plans, and others would be 25% has been applied to the total salaries to cover these costs. Consultants do not have any fringe benefits.

ACTIVITY COSTS: Activity costs are allocated for training workshops, meetings, assessments, evaluation activities, and communication resources. There will be no travels/per diem as it is expected that consultants are sourced within the State, and meetings and trainings (hybrid) occur in the respective States and LGAs.

OTHER DIRECT COSTS: These costs include facility management contributions, equipment and furniture purchases, office supplies, vehicle procurement and maintenance, and large-scale printing. These expenses are necessary for setting up and maintaining operational infrastructure at different levels of the program.

OVERHEAD (25.00%): Overhead costs are a standard component of program budgets, and they cover indirect expenses such as administrative support, utilities, and office space.

Conclusion

The 2-year NOHGI project will first create a framework for effective coordination, collaboration at all levels, after which the established structures will become catalysts for sustained oral health program implementation at service delivery level. Following this intervention, I recommend that the 2nd intervention (option B) - National Oral Health Workforce Expansion (NOWE) proposed in this

document follows to address workforce availability and technical capacity especially at PHC level where they are most needed. By focusing on PHC level (constituting over 80% of health facilities in the country and most accessible to people in rural areas), we would be promoting equitable access to quality oral healthcare services to a large segment of the population.

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