Republic of Sierra Leone

Ministry of Health

NATIONAL ORAL HEALTH STRATEGIC PLAN 2024–2030

Disclaimer

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Sierra Leone National Oral Health Strategic plan 2024–2030

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National oral health strategic plan 2024-2030

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Abbreviations

AIDS:	Acquired Immune Deficiency Syndrome
ARI:	acute respiratory infection
BPEHS:	basic package essential health service
CHC:	community health center
CHP:	community health post
CHW:	community health workers
COVID-19:	Coronavirus disease
DHIS2:	District health information system 2
DOH:	Department of Oral Health
DP:	development partners
GAP:	Global Action Plan
GDP:	gross domestic product
GOHAP:	Global Oral Health Action Plan
GSOH:	Global Strategy on Oral Health
HIV:	human immunodeficiency virus
HPV:	human papilloma virus
HRH:	Human Resources for Health Policy
IDSR:	Integrated disease surveillance and response
IP:	implementing partner
MCHP:	maternal and child health post
MDAs:	ministries, departments and agencies
M&E:	monitoring and evaluation
MoH:	Ministry of Health
NCD:	noncommunicable diseases
NEML:	national essential medicines list
NHSP:	National Health and Sanitation Policy
NOHSP:	National Oral Health Strategic Plan
NPHA:	National Public Health Agency
NPRC:	National Provisional Ruling Council
NSASRHP:	National School and Adolescent Sexual and Reproductive Health Programme

OHTWG:	Oral Health Technical Working Group
PHC:	primary health care
PLWD:	people living with disability
SES:	socioeconomic status
SL:	Sierra Leone
SLHFS:	Sierra Leone Health care Financing Strategy
SLNCDSP:	Sierra Leone Noncommunicable Diseases Strategic Plan
SLSHP:	Sierra Leone School Health Policy
SWOT:	strength, weaknesses, opportunities and threats
UHC:	universal health coverage
UPF:	ultra-processed food
UN:	United Nations
WHA:	World Health Assembly
WHO:	World Health Organization

Foreword

Welcome to the unveiling of our Oral Health Strategic Plan. Wi hin these pages lies a roadmap towards a brighter, healthier future for our communities. Oral I ealth is not merely a matter of smiles and aesthetics; it is fundamental to overall well-beir g, impacting everything from nutrition to self-esteem, and even extending to systemic health.

This strategic plan is the result of collaborative efforts, dr; wing upon the expertise and dedication of professionals from various fields within oral healtli, public health, policy-making, and community engagement. It embodies our collective commitn nt to ensuring equitable access to quality oral healthcare for all, regardless of socioeconomic stat 1s or geographical location.

As we navigate the complexities of modem healthcare, it beco nes increasingly evident that a proactive and holistic approach to oral health is imperative. Thi; plan is not just about treating dental diseases; it's about prevention, education, and empcwerment. It's about fostering partnerships and leveraging resources to address the root caus ., of oral health disparities and promote sustainable solutions.

Within these pages, you will find a comprehensive framework ou.lining our goals, strategies, and action steps. From enhancing preventive measures and expandi 1g ac_cess to care to promoting oral health literacy and advocating for policy changes, eac h component of this plan is meticulously designed to maximize impact and foster lasting chai ge.

But aplanis only as effective as its implementation. We recogniœ the challenges ahead and the dedication required to tum vision into reality. It will demand persistence, innovation, and collaboration at every level of society. Yet, as we embark on his joumey together, let us be inspired by the profound impact that improved oral health can h,1ve on individuals, families, and communities.

I extend my deepest gratitude to all those who have contribu ed to the development of this strategic plan. Your passion, expertise, and unwavering commitn ent have laid the foundation for transformative change. Let us now unite in purpose and deterr lination as we work towards a future where everyone can smile with confidence and live life to 1 be fullest.

Together, we can make a difference!

Dr. Austin Demby
Minister of Health

Preface

In crafting this Oral Health Strategic Plan, we embark on a journey fueled by a collective vision: a world where every individual enjoys optimal oral health and the opportunity for a fulfilling life unencumbered by dental disease. This document represents the culmination of rigorous research, passionate advocacy, and unwavering commitment to improving oral health outcomes for all.

The importance of oral health cannot be overstated. Beyond its impact on physical well-being, it influences social interactions, educational attainment, and economic productivity. Yet, despite significant advancements in dental care, disparities persist, disproportionately affecting vulnerable populations and underserved communities.

Recognizing the urgency of addressing these disparities, we have endeavored to create a strategic plan that is both comprehensive and actionable. It is rooted in evidence-based practices, informed by the latest research and guided by principles of equity, inclusivity, and sustainability.

This plan outlines a multifaceted approach to oral health, encompassing prevention, education, treatment, and policy reform. It emphasizes the importance of collaboration among stakeholders, including healthcare providers, educators, policymakers, community leaders, and individuals themselves.

Throughout the development of this plan, we have been inspired by the resilience and determination of those working tirelessly to improve oral health outcomes around the world. Their stories serve as a reminder of the profound impact that dedicated individuals and collective action can have on shaping a healthier future.

As we embark on the implementation of this strategic plan, we recognize the challenges that lie ahead. Achieving our goals will require perseverance, innovation, and a willingness to confront entrenched barriers. Yet, we are guided by a shared commitment to the principle that everyone deserves access to quality oral healthcare, regardless of their circumstances.

I extend my deepest gratitude to all those who have contributed to the creation of this plan. Your expertise, passion, and unwavering dedication have been instrumental in shaping its vision and objectives. Together, let us harness the power of collaboration and collective action to create a world where everyone can enjoy the benefits of good oral health.

Dr. Sartie Kanneh
Chief Medical Officer

Acknowledgement

Sierra Leone's National Oral Health Strategic Plan 2024–2030 (NOHSP 2024–2030) was developed through the concerted efforts of different organizations, stakeholders, partners and specialists, who, in diverse ways, contributed to its planning, design and distribution. These include the chief medical officer, deputy chief medical officer (clinical), and staff of the Department of Hospital Health Services that is currently hosting the Department of Oral Health in Sierra Leone.

Furthermore, the following partners provided technical inputs for this plan: the Directorate of Noncommunicable Diseases, the Directorate of Primary Health Care, the Directorate of Hospital and Ambulance Services, the Sierra Leone Medical and Dental Council, the Pharmacy Board of Sierra Leone, the Sierra Leone Nurses and Midwife Board, the Sierra Leone Inter-Religious Council, Health Alert, the National Public Health Agency, the Sierra Leone Indigenous Traditional Healers Union, the Sierra Leone Union on Disability Issues, the University of Sierra Leone/ COMAHS, the Njala University, the Choithram Hospital, the Nurses and Midwives Council, the Health for All Coalition, the Kings College Partnership in Sierra Leone, and the Ping Kang Dental Therapist School.

Finally, this work would not have even commenced or been completed without the contributions and inputs of key experts including Dr. Jia Bainga Kangbai, Consultant at the WHO Country Office in Sierra Leone; Dr. Lwazi Sibanda, Specialty Registrar in Dental Public Health, Professor Jennifer E. Gallagher MBE, Newland-Pedley Professor of Oral Health Strategy, King's College London, the UK, and Dr. Yuka Makino, Technical Officer for Oral Health, WHO Regional Office for Africa who reviewed the document; as well as Professor Habib Benzian, WHO Collaborating Center New York University, College of Dentistry, USA; and Professor Sudeshni Naidoo, WHO Collaborating Centre for Oral Health University of the Western Cape.

Dr. Sartie Kanneh

Chief Medical Officer

Executive summary

Oral health is not only a key pointer of overall health, prosperity and quality of life, but is also crucial to accomplishing universal health coverage (UHC). Oral diseases are among the most common noncommunicable diseases in Sierra Leone. For decades, oral health has not attracted sufficient consideration, due to the huge communicable disease burden. The National Oral Health Strategic Plan (NOHSP 2024–2030) was developed to provide strategic approaches to prevent, treat, control and decrease the burden of oral diseases.

This policy document provides the latest health and oral health situation in Sierra Leone, helping to identify barriers and facilitators for the promotion of oral health in Sierra Leone. It also provides the basis of evidence for developing the Oral Health Strategic Plan in Sierra Leone.

The NOHSP 2024–2030 was developed in line with the final draft of Sierra Leone's Oral Health Policy, 2009, as well as the National Health Sector Strategic Plan, the National Health and Sanitation Policy and the UHC Roadmap. It seeks to direct and mobilize all the required endeavours of the Sierra Leone Ministry of Health (MoH) and other partners that focus on preventing, treating and controlling oral diseases and conditions.

The priorities of the NOHSP 2024–2030 are aligned with those of the WHO Global Strategy and Action Plan on Oral Health and supported by views and recommendations from international oral health experts. The NOHSP 2024–2030 comprises two sections: (1) a general background of Sierra Leone with a justification for the development of this strategic plan, and a detailed situational analysis that provided the contextual foundation evidence and defence; and (2) its vision, mission, role and the core functions as well as the strategic plan and mechanisms for its implementation.

Section 1 provides the setting and evidence that were utilized to formulate NOHSP 2024–2030. It presents an overview of the current oral health situation in Sierra Leone through the national health systems. A comprehensive national oral health situational analysis that was conducted revealed the prevailing circumstances of the health framework including authority and administration, oral health diseases and their risk factors, and human resources. The information provided by the situational analysis sets the premise and basis for the second part of NOHSP 2024–2030 which details the objective, rationale, vital targets, intercessions, exercises, coordination components, observation/assessment system and the budget for the period 2024–2030.

The NOHSP 2024–2030 outlines four priority objectives and key strategies to achieve them, namely:

1. oral health governance: to strengthen oral health leadership, governance, network, partnership, collaboration, administration, and the provision of basic and essential oral health care;

2. oral health promotion and prevention: to strengthen and expand oral health promotion and prevention activities in all health programmes at the national and community levels targeting oral health risk factors;

3. oral health care: to integrate oral health services into the primary care level using the preventive approach; and

4. oral health workforce: to train and equitably distribute the national oral workforce across the country.

1

Chapter

1. Introduction

1.1 General background

Sierra Leone is a country located on the Southwest coast of West Africa, bordering Guinea and Liberia. Its rich natural resources include diamonds and iron ore.[1] However, Sierra Leone is also recovering from a decade-long civil war (1991–2002), the Ebola epidemic (2014–2016), natural disasters (2017), and now, the COVID-19 pandemic.[2,3,4,5,6] These circumstances, coupled with the challenging economic climate, have led to high disease burdens and substantial loss of human life, further impacting the already strained health system.[7]

WHO defines oral health as, "the state of the mouth, teeth, and orofacial structures that enable individuals to perform essential functions, including 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."[8] Oral health changes across the life course from infancy into older age and is essential for general health and support individuals in participating in society. Although most oral diseases are preventable by controlling the common risk factors of major noncommunicable diseases (NCDs),[9] oral diseases are a public health concern as they are among the most common diseases globally, regionally, and nationally, with high social, economic, and health system impacts.[10]

In Sierra Leone, the first national oral health survey of schoolchildren aged 6, 12, and 15 years was conducted in 2017 by Ghotane and others.[11] The survey reported that over 82% of the 1174 schoolchildren surveyed had dental caries (decay) experience, 10% reported current pain and 7%–8% had oral conditions related to untreated caries, or PUFA (pulp, ulceration, fistula, abscess) lesions.[9] In addition, the WHO Global oral health status report 2022 estimated that more than 30% of the population suffered from untreated dental caries of permanent teeth in 2019.[12]

The limited available oral health services were destroyed during the civil war, and challenges brought by the Ebola crisis and COVID-19 have eroded opportunities to prioritize and invest in oral health. Moreover, Ghotane and others,[9] also noted that, in 2017, Sierra Leone had a shortage of oral health professionals with only 10 dentists, supported by approximately 10 oral health professionals (dental therapists, dental assistants, and oral health promoters) available nationally, almost all of whom are based in the capital city Freetown. The rough dentist-to-population ratio in 2020 was 1: 750 000[13] – which is far lower than the density threshold of oral health professionals that correspond to 70% of the UHC service coverage index (5.30 dental personnel per 10 000) in the WHO African Region.[14] Regarding cost, the estimated direct expenditure on oral health care in Sierra Leone was limited to US$ 0.20 per capita.[15]

In addition to Africa's current Regional Oral Health Strategy 2016–2025: Addressing oral diseases as part of noncommunicable diseases (NCDs),[16] a recent opportunity to prioritize oral health came after the endorsement of the historic resolution on oral health (WHA74.5) during the World Health Assembly (WHA) in 2021.[17] Following the resolution, a global strategy on oral health[18] and its action plan with global monitoring framework,[19] were endorsed by Member States, including Sierra Leone. This allows the Government of Sierra Leone to develop a coherent national plan for oral health that clearly identifies risk factors associated with oral diseases and conditions. Furthermore, this policy document is aligned with the global strategy drivers.

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[18]WHO (2022). Global Strategy on Oral Health. https://apps.who.int/gb/ebwha/pdf_files/WHA75/A75_10Add1-en.pdf
[19]WHO (2022). Draft Global Oral Health Action Plan. https://cdn.who.int/media/docs/default-source/ncds/mnd/eb152-draft-global-oral-health-action-plan.pdf?sfvrsn=ecce482e_4

1.2 Justification of the Oral Health Strategic Plan

The Oral Health Strategy will facilitate the mainstreaming of oral health into all policies and systems, as well as promote cross-cutting approaches centred on the needs of people and communities. Currently, oral health is not explicitly mentioned in national policies. The integration of oral health within the wider health promotion, disease prevention and control of NCDs, UHC and other health policies will provide an integrated and cost–effective approach to tackling oral health.

The intention to launch the oral health policy in 2009 was thwarted by a variety of factors, including competing health priorities that have since been addressed. Now, the Ministry of Health in Sierra Leone is committed to developing and implementing a National Oral Health Strategic Plan (NOHSP) in line with current global and regional strategies. It is expected that the NOHSP will leverage on the results of the first national oral health survey of schoolchildren in Sierra Leone (2017)[20], and the current available relevant evidence base on oral health of Sierra Leone.[21,22,23]

This document provides not only the latest situational analysis of oral health in Sierra Leone, which contributes to identifying barriers and facilitators to promote oral health in Sierra Leone but also the evidence base to develop the oral health strategic plan. The situation analysis is based on the mix of the situation analysis by Dr. Jia Bainga Kangbai, Consultant at the WHO Country Office in Sierra Leone and the work of Dr. Lwazi Sibanda and Professor Jennifer E. Gallagher at King's College London. Much of the current evidence base, including the first national oral health survey of schoolchildren, was undertaken at King's College London by Dr. Swapnil Ghotane as part of his PhD, under the supervision of Professor Stephen J. Challacombe and Professor Jennifer E. Gallagher, working in collaboration with Sierra Leone's partners from its inception to design, delivery and publication.

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2. Situational analysis of oral health in Sierra Leone

2.1 General well-being and oral health situation in Sierra Leone

2.1.1 Population and demography of Sierra Leone

Sierra Leone has a fast-growing population of 8 million[24]. Its population increased from 2.32 million to 8.14 million people from 1960 to 2021, representing a 251.3% increase in 61 years.[25]

Despite the war and natural disasters described earlier, according to UN projections, the trend of life expectancy at birth has generally been upward in Sierra Leone since 1994. In 2022, the life expectancy in Sierra Leone was 60.8, with further increases expected throughout the century using UN projections.[26] Sierra Leone has a young population with below 40% of the population is aged between 0 and14 years, which is similar to the current population pyramid of Africa.[27]

2.1.2 Urban and rural localities of Sierra Leone

The majority of Sierra Leoneans live in rural localities, with around 43% of the population living in the country's larger cities. There is a growing trend towards urbanization which increases by 3.1% annually.[28]

2.1.3 Sierra Leone's economic context

Sierra Leone is a low-income country with the sixth lowest GDP per capita in the world in 2020. In 2021, 74% of the population lived below the poverty line (US$ 3.20 a day).[29] Economic inequalities are profound and have a strong geographical component, associated with urbanization and place of residence. For example, 60% of the rural population live in poverty, compared with 20% of urban dwellers. Additionally, poverty is highest in the Northern region and lowest in the Western region, with Greater Freetown (in the Western region) having significantly lower poverty rates than other areas.[30]

2.1.4 General health situation in Sierra Leone

Regarding general health in Sierra Leone, communicable, as well as maternal, neonatal, and nutritional diseases – listed among the top ten causes of death across all ages in 2019 – still pose the same threat as in 1990.[31] However, NCDs, such as cardiovascular diseases and diabetes, have increased ranking as leading causes of death.[32] This is in line with the broader sub-Saharan African picture, where countries are undergoing a rapid epidemiological and nutrition transition towards a westernized diet (high in ultra-processed food, high in sugars, salt and fats), marked by a shift from infectious diseases to NCDs which are the leading cause of death.[33] The critical burden of NCDs, facing the greatest increase in death rates from diabetes, cardiovascular and respiratory diseases, as well as oral diseases morbidity.[34,35,36] Therefore, as Sierra Leone continues to transition to a more western diet, the prevalence of NCDs (including oral diseases) will increase.[37] Furthermore, combined with the increasing prevalence of chronic conditions, many health challenges from infectious diseases remain a threat in Sierra Leone.[38]

Alongside its development partners, the Government of Sierra Leone, through the Ministry of Health and Statistics Sierra Leone (Stats SL), conducted the 2019 Sierra Leone Demographic and Health Survey (2019 SLDHS).[39] The overarching aim of the SLDHS was to inform policy and provide data for planning, implementation, and monitoring and evaluation of national health programmes. Some of the key findings of the 2019 SLDHS include the improvement in nutrition indicators, such as stunting, wasting, and underweight. It found that only 56% of children aged 12–23 months had received all basic vaccinations by the time of the survey. Advice or treatment was sought for 86% of children aged under 5 years who had symptoms of acute respiratory infection (ARI) in the two weeks before the survey as well as for 75% of children aged under 5 years who had a fever in the two weeks before the survey.[40]

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2.1.5 Oral disease

This section will describe oral diseases commonly affecting people across the life course in Sierra Leone.

2.1.5.1 Dental caries (tooth decay)

Dental caries (also known as tooth decay) is a disease that affects both adults and children; it is a complex and dynamic disease process resulting from interactions between the microbial biofilm on the tooth surface and sugars and has salivary and genetic influences.[41] Untreated decay can result in pain, infection, reduced quality of life, and sometimes, it causes death if untreated.

The global burden of diseases, injuries and risk factors study (GBD) 2019 estimated at 37% the prevalence of untreated caries of deciduous teeth in children aged 1–9 years and the prevalence of untreated caries of permanent teeth in people older than 5 years at 32%. Both figures are rather indicative and likely under-estimations.[42]

Based on the national oral health survey of schoolchildren in 2017, no child with dental caries had filled, that is treated, teeth.[43] In addition, approximately 10% of all children reported having experienced pain in the last three months and 7%–8% showed signs of chronic infection resulting from decayed teeth. There were clear dissimilarities in dental caries experience by geography, with those generally living outside the Western region (which hosts the capital city) having significantly higher odds of decay. This could be due to economic factors, including poverty (lowest in the Western region), and household wealth, which is associated with improved access to drinking water and sanitation, better hand hygiene and education (highest in the Western region).[44]

Regarding the oral health of adults, based on a pilot cross-sectional survey[45], no adults had filled teeth. In 2017, some survey showed that all adults had some form of dental caries experience. The average decayed experience was 14.2 (meaning that, on average, almost half of the teeth in adults were decayed or missing due to dental caries). Also, almost four out of ten adults had missing teeth with an average of four missing teeth per adult.[46]

2.1.5.2 Gum diseases

There are a number of conditions that affect the tooth-supporting tissues referred to as the periodontium or gums. The most common forms of gum diseases are gingivitis (reversible inflammation of the gums) and periodontitis (inflammation that leads to the destruction of the tooth-supporting structures, which can result in tooth loss).[47] There are many health conditions, including poorly controlled diabetes that are associated with periodontal diseases. Smoking tobacco and poor oral hygiene are the main risk factors for periodontitis. Gingivitis impacts both adults and children, but periodontitis mainly affects adults (unless associated with a systemic or genetic disorder).[48] The estimated prevalence of severe periodontal diseases in people aged 15 years and above in Sierra Leone in 2019 was estimated at 12.3%.[49]

2.1.5.3 Tooth loss

Tooth loss is considered an effective marker of oral health. The main causes of tooth loss are untreated caries and periodontal diseases. Furthermore, tooth loss not only reflects oral disease but also relates to the availability and accessibility of dental care. Due to the cumulative effects of oral diseases and other factors such as the availability and accessibility of oral health care, the prevalence and incidence of tooth loss increases with age.[50] The prevalence of edentulism in people aged above 20 years in Sierra Leone in 2019 was estimated at 3%.[51]

2.1.5.4 Oral cancer

Definitions for oral cancer usually refer to cancerous lesions of the lip, oral cavity and oropharynx (middle part of the throat).[52] Cancers of the oral cavity are generally associated with increased alcohol consumption, tobacco, or both, whereas oropharynx cancers are increasingly attributed to infection with the human papillomavirus (HPV)[53]. The estimated incidence rate of oral cancer (per 100 000 population) was 1.2 for both sexes in Sierra Leone in 2020, showing that more males than females have lip and oral cavity cancer for all ages.[54]

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53 Johnson DE, Burtness B, Leemans CR, Lui VWY, Bauman JE, Grandis JR. Head and neck squamous cell carcinoma. Nat Rev Dis Primers. 2020;6(1):92.
[54] WHO (2022). Oral Health Sierra Leone 2022 country profile. https://www.who.int/publications/m/item/oral-health-sle-2022-country-profile

2.1.5.5 Oral manifestations of human immunodeficiency virus (HIV)

HIV is the eighth most common cause of death in Sierra Leone.[55] Oral manifestations of HIV occur in 30% –80% of infected persons, with variations being attributable to factors such as affordability of standard antiretroviral therapy. Oral manifestations include fungal, bacterial, or viral infections of which oral candidiasis (often called thrush) is the most common and often the first symptom to present. Oral lesions can cause pain, discomfort, dry mouth, and difficulty eating.[56]

2.1.6 Risk factors and determinants of oral health

Oral diseases share common risk factors with many other NCDs, which present a global burden, particularly to sub-Saharan African countries. NCDs, also known as chronic diseases, are the result of the combination of genetic, physiological, environmental and behavioural factors.[57] These diseases are also driven by wider determinants of health, including forces that include rapid unplanned urbanization, globalization of unhealthy lifestyles and population ageing. The impacts of socioeconomic status (SES) on health are well documented,[58] but there is also a multifaceted relationship between indicators of poverty and oral health. For example, certain indicators of poverty such as shelter and monetary poverty are associated with higher prevalence of caries.[59]

Modifiable risk factors of oral diseases include a diet high in ultraprocessed foods (UPFs) (especially, high in free sugars), tobacco in all its forms, unhealthy use of alcohol and poor hygiene (including lack of exposure to fluorides).[60] Additionally, factors that influence modifiable risk factors pertaining to the structural and environmental determinants of health include, but are not limited to, school, policy, workplace, housing, and political, physical and social environments.[61]

2.1.6.1 Ultraprocessed foods (especially high in free sugars)

Global trends show that a higher consumption of ultraprocessed foods that are high in sugar, salt and fats is associated with an increased risk of comorbidity of cancer and cardiometabolic diseases.[62] Sugar is the main risk factor for dental caries and other NCDs, including diabetes. As Sierra Leone continues to transition towards an ultraprocessed diet, especially high in sugar, this will contribute to increase the prevalence of dental caries. Based on Sierra Leone's national oral health survey of schoolchildren in 2017, more than nine out of 10 adults reported consuming fruits at least once a day. Other items such as fizzy drinks, sweets, cakes/biscuits, and fruit juices were reported as being rarely consumed. Only two out of 10 respondents reported consuming fizzy drinks and cakes/biscuits while 17% of respondents reported consuming sweets and fruits juice at least 'once a day or more'. Per capita availability of sugars in Sierra Leone was estimated at 20.9 g/day in 2019. As of 2021, Sierra Leone has not introduced a tax policy on sugar-sweetened beverages.[63]

Generally, food quality and preference, and dietary habits play a significant role in oral health. Different cultural settings have unique dietary practices which invariably affect people's oral health. For example, the Limba tribe in Sierra Leone, consume hard foods that may lead to the physical destruction of the tooth enamel. In contrast, most people in the east of the country prefer sugary meals with less fibres. The increased consumption of cariogenic foods is significantly associated with an increased risk of dental caries.[64] It is therefore important to understand the cultural dietary habits of a people to provide effective preventive oral health care services.

2.1.6.2 Fluoride

The caries process can also be altered with the introduction of fluoride. During the early stage of the caries process, dietary factors and fluoride availability can prevent lesion progression and lead to remineralization.[65] Outside the national schoolchildren survey, there is little available information to describe the use of fluoride toothpaste in Sierra Leone; however, according to the Global oral health status report 2022, Sierra Leone was categorized as a country where fluoride toothpaste is unaffordable.[66]

[55] Institute for Health Metrics and Evaluation (IHME). Sierra Leone Profile. Seattle, WA: University of Washington; 2021.
[56] Bajpai S, Pazare AR. Oral manifestations of HIV. Contemp Clin Dent. 2010;1(1):1-5.
[57] World Health Organization. Noncommunicable diseases: World Health Organization; 2022 [cited 2022 16 September]. Available from: https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases.
[58] Schwendicke F, Dorfer CE, Schlattmann P, Foster Page L, Thomson WM, Paris S. Socioeconomic inequality and caries: a systematic review and meta-analysis. J Dent Res. 2015;94(1):10-8.
[59] Folayan MO, El Tantawi M, Aly NM, Al-Batayneh OB, Schroth RJ, Castillo JL, et al. Association between early childhood caries and poverty in low and middle income countries. BMC Oral Health. 2020;20(1):8.
[60] Sheiham A, Watt RG. The common risk factor approach: a rational basis for promoting oral health. Community dentistry and oral epidemiology. 2000;28(6):399-406.
[61] Heilmann A, Sheiham A, Watt RG, Jordan RA. [The Common Risk Factor Approach - An Integrated Population- and Evidence-Based Approach for Reducing Social Inequalities in Oral Health]. Gesundheitswesen. 2016;78(10):672-7.
[62] https://www.thelancet.com/journals/lanepe/article/PIIS2666-7762(23)00190-4/fulltext (Lwazi come back)
[63] WHO (2022). Oral Health Sierra Leone 2022 country profile. https://www.who.int/publications/m/item/oral-health-sle-2022-country-profile
[64] Moynihan P., Petersen P.E. Diet, Nutrition and the Prevention of Dental Diseases. Public Health Nutr. 2004;7:201–226. doi: 10.1079/PHN2003589.
[65] Pitts NB, Zero DT, Marsh PD, Ekstrand K, Weintraub JA, Ramos-Gomez F, et al. Dental caries. Nat Rev Dis Primers. 2017;3:17030.
[66] WHO (2022). Oral Health Sierra Leone 2022 country profile. https://www.who.int/publications/m/item/oral-health-sle-2022-country-profile

2.1.6.3 Tobacco use

Tobacco is a recognized risk factor for periodontal diseases[67] and oral cancer. The traditional practice of smoking rolls of unprocessed tobacco leaves is still a social custom in some parts of the country; the same is true of the practice of inhaling "snuff" made of ground tobacco leaves with additives. The majority of respondents reported no history of smoking (86%), and only a small proportion of respondents were current smokers (9%) based on the Sierra Leone national oral health survey of schoolchildren in 2017.[68] However, data from the 2017 Sierra Leone global youth tobacco survey (GYTS), which presented information collected from 6680 students aged 11–17 years nationwide, indicated that the prevalence of smoking in that age group was 27.9% for males and 18.6% for females.[69] Additionally, one population-based cross-sectional study conducted by Samai et al,[70] estimated that 26% and 8% of adults use tobacco and smokeless tobacco products respectively, in Sierra Leone.[71]

2.1.6.4 Alcohol

Unhealthy use of alcohol is a risk factor for oral cancer and the risk increases particularly when used in combination with tobacco.[72] As with tobacco, most respondents reported no history of alcohol (83%) and only a small proportion were current drinkers of alcohol (8%), based on the Sierra Leone National Oral Health Survey of Schoolchildren in 2017.[73]

2.1.6.5 Water, sanitation, and hygiene components

Access to water and personal hygiene are strongly associated with oral health. Over the years, Sierra Leone has developed and sustained a robust water, sanitation and hygiene (WASH) project that is mostly supported by international implementing partners. From 2000 to 2022, there was an increase in the coverage of households that have safely managed coverage with sanitation levels, as well as access to safe drinking water for both rural and urban dwellers.[74] Regarding access to safe drinking water, in 2022, 10.3% of the population had access to safely managed water, and 55.1% had access to a basic service level, compared to 51.6% and 9.2% respectively in 2018. Regarding health care services, 56% of hospitals have basic hygiene services (hygiene facilities at points of care and soap at toilets) and 83% have hygiene facilities at points of care.

On 3 October 2023, Sierra Leone, alongside its developmental partners, launched the WASH national outcome routine mapping report (WASH-NORM) 2022 and kick started the WASH information management system (WASHIMS) platform.[75] The WASH-NORM 2022 projects the country's journey toward a safe and sustainable national WASH service in line with the SDG 6 on clean water and sanitation, with a focus on universal access to basic sanitation.

2.2 Oral health system response in Sierra Leone

2.2.1 Oral health governance

The Sierra Leone Medical and Dental Council oversees the governance of all medical and dental services, and all medical practitioners and dental surgeons are mandated to register. The Medical and Dental Council is a statutory body established by national provisional ruling council Decree No. 12 of 1994 and was subsequently incorporated under the laws of Sierra Leone by the Repeal and Modification Act of Parliament in 1996.[76]

The responsibilities of the Sierra Leone Medical and Dental Council include the following:

i) registering and licensing all health care facilities in accordance with such standards as the Council may set, with the approval of the Minister;

ii) monitoring and periodically inspecting all health care facilities to ensure that they adhere to established medical and dental standards and practices; and

iii) closing down private health care facilities in the event of failure to comply with standards.[77]

[67] Kinane DF, Stathopoulou PG, Papapanou PN. Periodontal diseases. Nat Rev Dis Primers. 2017;3:17038.
[68] Ghotane SG, Challacombe SJ, Don-Davis P, Kamara D, Gallagher JE. Unmet need in Sierra Leone: a national oral health survey of schoolchildren. BDJ Open. 2022;8(1):16.
[69] James PB, Kabba JA, Bah AJ, Idriss A, Kitchen C, Conteh EB, Lahai M, Dalinjong PA. Current tobacco use and susceptibility to using tobacco among non-users of tobacco: a cross-sectional study among school-going adolescents in Sierra Leone. Tob Induc Dis. 2023 Jan 30;21:16. doi: 10.18332/tid/157091.
[70] Samai M, Bash-Taqi D, Samai HH, Edem-Hotah J, Daoh SK, Alemu W. Prevalence of tobacco use and physical activity among adult Sierra Leonean population. Sierra Leone Journal of Biomedical Research. 2011;3:49–59.
[71] Samai M, Bash-Taqi D, Samai HH, Edem-Hotah J, Daoh SK, Alemu W. Prevalence of Tobacco Use and Physical Activity among Adult Sierra Leonean Population. Sierra Leone Journal of Biomedical Research. 2011;3:49–59.
[72] Lingen MW, Kalmar JR, Karrison T, Speight PM. Critical evaluation of diagnostic aids for the detection of oral cancer. Oral Oncol. 2008;44(1):10-22.
[73] Ghotane SG, Challacombe SJ, Don-Davis P, Kamara D, Gallagher JE. Unmet need in Sierra Leone: a national oral health survey of schoolchildren. BDJ Open. 2022;8(1):16.
[74] WASHDATA.org
[75] UNICEF Sierra Leone. Sierra Leone launches its WASH National Outcome Routine Mapping Report 2023 [available from: https://www.unicef.org/sierraleone/stories/sierra-leone-launches-its-wash-national-outcome-routine-mapping-report
[76] Medical and Dental Council of Sierra Leone. About Us 2023 [available from: https://mdcsierraleone.org/about/#.
[77] Medical and Dental Council of Sierra Leone. About Us 2023 [available from: https://mdcsierraleone.org/about/#.

Sierra Leone has a functioning Department of Oral Health (DoH) that is situated at the Connaught hospital in the capital Freetown. The DoH functions within the Directorate of Hospital and Ambulance Services in the Ministry of Health (MoH), mainly providing clinical service but is not involved in public health interventions. The 2024 annual operational budget allocated for the running of DoH is less than US$ 5000.

2.2.2 Oral health promotion and oral disease prevention

Oral health promotion and oral disease prevention are undertaken by the risk communication and community engagement unit of the MoH Health Education Department.

The unit provides advocacy for oral health integration into all policies and the creation of supportive environments. These functions also include the assessment of health needs, the development of national operational and strategic health plans, the review of existing national health programmes, as well as downstream measures such as training and support for health care service providers and agencies to ensure that health promotion programmes are delivered.

Currently, there is no national strategy or policy to reduce the consumption of free sugar, or policy to enforce the tax on UPFs or sugar-sweetened beverages (SSB). Although the country has no guidelines for the optimal use of fluoride, some schools have embedded oral hygiene within their school curricula.

Additionally, MoH has developed strong longstanding relationships with many national and international health organizations that support ministries, departments and agencies (MDAs) with various oral health promotion activities.

2.2.3 Oral health workforce

The development of a cost-effective resilient health workforce, including for oral health, that can provide evidence-based and high-quality health care services that is equitable and accessible to all by 2025 is a main objective of the Human Resources for Health Policy (HRH Policy 2017–2025), published by MoH. This has replaced the Human Resources for Health Policy 2012 and Human Resources for Health Strategic Plan (2012–2016).

Sierra Leone has no dental school, but it has two dental therapists' programmes. In recent years, there has been an increase in the number of nursing schools in the country, some of which provide dental therapist training to dental assistants and nurses. There has also been a proliferation of medical and nursing training institutions that offer training for dental assistants, but these require on-going quality assurance of their curricula, as well as continual capacity-reinforcement for the lecturers delivering the courses.

In 2024, there are 36 registered dentists (13 nationals and 23 foreign nationals) in Sierra Leone; among them, four dentists working in the public sector under DoH, and 32 dentists working in private practice.

There is a perennial acute problem of distribution and retention of trained general health workers throughout Sierra Leone. All the 16 districts fall short of the WHO's recommended minimum thresholds for general health worker density (22.8 health workers per 10 000 population)[78]. Sierra Leone's only hospital with a fully staffed dental clinic has three full-time equivalent public sector dentists. It must also be noted that occasionally international dentists provide support on short-term projects. The country has a few dental auxiliaries such as dental therapists/assistants/nurses most of whom are based in the capital Freetown,[79] but the dentists-to-population ratio is extremely low (0.1 per 10 000 of the 2014–2019 population).

2.2.3.1 Traditional practitioners

Although exact figures are unavailable particularly due to the nature of the services, it is widely known that many people rely on traditional medicines and practitioners. Traditional medical practice in Sierra Leone has now been structured into a national association, which is recognized by both the central government and the communities.

[78] WHO Sierra Leone. High level international conference on health workforce ends in Sierra Leone. 2016 [available from: High level international conference on health workforce ends in Sierra Leone | WHO | Regional Office for Africa

[79] Ghotane SG, Challacombe SJ, Gallagher JE. Fortitude and resilience in service of the population: a case study of dental professionals striving for health in Sierra Leone. BDJ Open. 2019;5:1.

2.2.4 Oral health service

Currently, some targeted population groups, mainly pregnant and breastfeeding women, children aged under 5 years, and people living with disability and HIV, can access free basic services in the public sector, including oral health and malaria, under MoH's free health care programme. This free basic service is defined as the basic package of essential health services (BPEHS), first developed in 2010 in close partnership with all health care stakeholders. The BPEHS has been revised periodically in subsequent years to capture the growing national health trends. The revised 2015 BPEHS, including oral health (Table 1), requires that the essential health services components must be delivered as an integrated whole (that is, the full range of services available) at community, maternal and child health posts (MCHP), community health posts (CHP), community health centres (CHC), as well as in district hospitals, regional hospitals and the national hospital (Connaught hospital Sierra Leone).

Table 1. Package of essential services for oral health at the primary care level[80]

Community	MCHP	CHP	CHC
Education and sensitization on oral care prophylaxis (including tooth brushing)	Same as community, plus: Referral for • extraction, filling and ART • ameloblastoma • minor surgery • dentures, crowns and bridges • Burkett lymphoma • treatment of dental injuries	Same as MCHP	Same as MCHP and CHP, plus: minor surgery ameloblastoma dental injuries

These services will be free for targeted population groups.

In contrast, the general population needs to make out-of-pocket payments to access health services, even in the public sector. The out-of-pocket payment for dental examination is approximately US$30 on average. Roughly 95% of dental services in Sierra Leone are in the private sector, and the number of private dental clinics is increasing. However, there is a shortage of appropriate instruments and equipment to perform basic procedures across both the private and public sectors and this requires future investment.

To solve the current situation, Sierra Leone has a roadmap to achieve universal health coverage (UHC) by 2030. This roadmap will be implemented by both national and regional government administrations to provide the free basic service, including oral health service. UHC is a step towards achieving adequate oral health, since it provides health care services for all eligible residents of different regions, without financial hardship.

In addition to the financial barrier to access to services, lower levels of education have been associated with lower utilization of preventive health care services, delayed diagnosis of health conditions, lack of adherence to medical instructions, poor health outcomes, and high mortality rate.[81] Moreover, the already marginalized and vulnerable populations are misinformed about oral health and suffer thus negative oral health impacts. Qualitative research conducted by academics at King's College London with key stakeholders working in oral health in Sierra Leone in 2017, identified barriers for users and professionals, as well as physical barriers to accessing dental care as shown in Table 2.[82]

[80]MoH. Basic package of essential health services 2015-2020. 2015. [available from: https://MoHs2017.files.wordpress.com/2017/06/gosl_2015_basic-package-of-essential-health-services-2015-2020.pdf
[81] Schillinger D, Grumbach K, Piette J, Wang F, Osmond D, Daher C, Palacios J, Sullivan GD, Bindman AB. Association of health literacy with diabetes outcomes. JAMA. 2002;288(4):475–82.
[82] Ghotane SG, Challacombe SJ, Gallagher JE. Fortitude and resilience in service of the population: a case study of dental professionals striving for health in Sierra Leone. BDJ Open. 2019;5:7.

Table 2. List of barriers and challenges for accessing oral health in Sierra Leone.[83]

User barriers	Professional barriers	Physical barriers
Cost Availability Geographical location Preference for example traditional medicine Lack of priority – presence of other health conditions	Limited number of trained professionals No formal dental training environment Lack of incentive to work in rural areas	Dental services focused in capital – Freetown Lack of government funding Lack of equipment and supplies

2.2.4.1 Community outreach

MoH has longstanding community outreach programmes for health promotion, utilizing health education. These are led by district health management teams (DHMT) and are ongoing. These teams identify needs and ensure the mobilization of necessary resources. The community outreach services are often the first point of contact for people, especially those in the hard-to-reach areas, where people may not have access to primary or peripheral health care centres or units. However, they do not currently offer oral health services or oral health promotion.

Sierra Leone has a mobile health clinic that currently serves as the only viable option for providing treatment to vulnerable groups of people who are mostly living in isolated hard-to-reach areas. Treatment is provided on a bus containing essential medicine and equipment. The mobile health clinic visits different each region only on a monthly basis. However, the provision of oral health care is not currently within the scope of care provided.

2.2.5 Oral health medicines and preparation

Pharmaceutical policy documents such as the National Medicines Policy, the national essential medicines list (NEML), the Standard treatment guidelines for primary level prescribers, and a national formulary were launched in 2012 by the MoH. Silver diamine fluoride and glass ionomer cement feature on the WHO essential medicine list but not on the NEML, whereas fluoride toothpaste is on it. In terms of dental preparation, the country has gradually started the phasing down of the use of dental amalgam as dental filling materials to fill cavities caused by dental caries in line with the Minamata Convention on Mercury.[84]

According to the Minamata Initial Assessment in Sierra Leone in 2019[85], the national inventory provides for an estimated input of 29 kg of mercury per year from dental amalgam. At present, with no official framework for the control of dental amalgam, one of the recommendations of this assessment is to prepare an implementation plan for phasing down the use of dental amalgam, in line with the National Oral Health Strategic Plan, including the following objectives and outputs:

The objective of this implementation plan is to take appropriate measures to gradually accompany the phase-down of the use of dental amalgam in the country. The measures adopted may, among other things, lead to the following progress:
(i) reduction in the demand for dental restoration;
(ii) promotion of mercury-free dental equipment;
(iii) establishment of a dental health and insurance system favourable to mercury-free products;
(iv) promotion of the use of best available techniques and best environmental practices; and
(v) reduction, leading to the gradual elimination, of the use of mercury-containing amalgams.

MoH has faced long-standing challenges regarding counterfeit medicines. The aspect of the consumer protection law that requests anyone who is buying anything to check that it is intact and not damaged is still a challenge. Additionally, unregistered medicines may also be given by unlicensed practitioners.

[83] Ghotane SG, Challacombe SJ, Gallagher JE. Fortitude and resilience in service of the population: a case study of dental professionals striving for health in Sierra Leone. BDJ Open. 2019;5:7.
[84] UNEP U. Minamata Convention on Mercury: text and annexes. UNEP, Geneva, Switzerland. 2013.
[85] Minamata Convention on Mercury, Oct. 10, 2013, https://www.mercuryconvention.org/Portals/11/documents/conventionText/Minamata%20Convention%20on%20Mercury
UNEP (2019). Minamata Convention Initial Assessments - Sierra Leone. https://minamataconvention.org/en/documents/minamata-convention-initial-assessments-sierra-leone

2.2.6 Oral health information system and research

In 2008, Sierra Leone established the DHIS2 as its national routine health information system. Concurrently, it adopted the technical guidelines to implement the integrated diseases surveillance response (IDSR) framework, developed by the WHO Regional Office for Africa.[8] Table 3 shows the morbidities from oral diseases in 2018, based on DHIS2. Subsequently, Sierra Leone began comprehensive public health surveillance and mounted response systems using DHIS2 for all health-related events, diseases and conditions (including oral health) at all levels of the health system. Oral conditions in peripheral health units and hospital outpatient and inpatient centres alongside the percentages of oral and other chronic health conditions are all recorded in the Ministry of Health and Sanitation (MoHS) health management information system.

Table 3: Morbidities in 2018 for oral diseases from the district health information system in Sierra Leone

Morbidity (Number of morbidities counted, not the number of patients)	Peripheral health unit n (%)*	Hospital outpatient n (%)	Hospital inpatient n (%)	Total n (%)	Number of deaths reported at hospitals at national level.
Oral and dental conditions	**2235 (0.05)**	**2296 (1.09)**	**162 (0.18)**	**4693 (0.09)**	**1**

***** The denominator for the percentage is the total number of all diseases that were recorded at the health facilities in 2018

With regards to research, generally, the research output regarding oral health in Sierra Leone is low. The first oral health publication on Sierra Leone was published in the mid-1970s. It focused on the organization and delivery of dental services in the country.[86] However, it was only in 2017 that the first national oral health survey of schoolchildren in Sierra Leone was completed, with academics in King's College London working in collaboration with dental teams in Sierra Leone.[87]

In 2021, Sierra Leone launched the Research for Health Policy 2021–2030 (R4H 2021–2030),[88] which aims to provide a policy framework for the planning, coordinating, conducting, regulating, reporting, dissemination and use of health research, including oral health research. The R4H 2021–2030 was developed through the collaborative efforts of various entities and individuals, including institutions of higher learning and health care service providers. It also captures the research into various diseases and conditions including oral health.

[86] Ghotane SG, Challacombe SJ, Don-Davis P, Kamara D, Gallagher JE. Unmet need in Sierra Leone: a national oral health survey of schoolchildren. BDJ Open. 2022; 8(1): 16.
[87] Ghotane SG, Challacombe SJ, Don-Davis P, Kamara D, Gallagher JE. Unmet need in Sierra Leone: a national oral health survey of schoolchildren. *BDJ Open*. 2022; **8**(1): 16.
[88] Ministry of Health and Sanitation. Sierra Leone
National Research for Health Policy 2021 [available from: https://portal.MoHs.gov.sl/download/33/publications/1580/sierra-leone-national-research-for-health-policy-06-12-21-final-draft-a5.pdf

3. SWOT Analysis for Oral Health in Sierra Leone

3.1 Oral health SWOT analysis

A SWOT analysis is a proven formula recognized by WHO and other health agencies that can help health systems to analyse and optimize their oral health services and dental practice. Below is a SWOT analysis of the oral health care system in Sierra Leone.

Fig. 1. Summary of the SWOT analysis for oral health in Sierra Leone

3.1.1 Strengths

3.1.1.1 Health education and promotion unit: The functions of Health education and promotion units is to advocate for the integration of oral health in all policies using a public health approach to address the wider determinants of health.

3.1.1.2 Mobile health clinic: Sierra Leone has mobile health clinics which are currently the only viable option for providing treatment to isolated and vulnerable groups of people who are mostly living in hard-to-reach areas. These clinics may offer high–quality and cost–effective option for health care, particularly during health emergencies. and can be leveraged to provide basic oral health care services in hard-to-reach areas.[89,90]

3.1.1.3 Health training facilities: Sierra Leone is experiencing the proliferation of medical and nursing training institutions (mainly in the private sector) that offer training courses on oral health care for dental assistants.

3.1.1.4 Water, sanitation, and hygiene components: Over the years, Sierra Leone has developed and sustained robust water, sanitation and hygiene (WASH) projects that are mostly supported by international implementing partners.

3.1.1.5 Oral health governance: There are DoH offices in all regional hospitals throughout the four regions in Sierra Leone. The DoH is headquartered at the Connaught Government Hospital which is located in the Western Region of Sierra Leone. The DoH provides national and regional level oral health care services such as oral health treatment, oral disease prevention, control and management.

[89] Aranda-Jan, C.B., MoHutsiwa-Dibe, N. & Loukanova, S. Systematic review on what works, what does not work and why implement mobile health (mHealth) projects in Africa. *BMC Public Health* **14**, 188 (2014).
[90] Konneh, A.S. The power of free mobile medical clinics in underserved communities in Sierra Leone. 2023 [available from: https://medium.com/@abubakarrsidiquekonneh/the-power-of-free-mobile-medical-clinics-in-underserved-communities-in-sierra-leone-e34dd25ad2d7

3.1.1.6 Oral health workforce: Despite their limited number, oral health staff have exhibited great fortitude and resilience.[91] This workforce can be leveraged whenever necessary to escalate their service delivery. However, most of them are concentrated in the private sector.

3.1.2 Weaknesses

3.1.2.1 Limited oral health budget: The current national annual budget allocation to DoH is less than US$5000 USD, which is likely to have limited impact on needs.

3.1.2.2 Small oral health workforce: Oral health staff shortages reduce the ability to facilitate time–efficiency and cost–effectiveness for patients. This leads to an extension of the dental patient's waiting times, consultations, prolonged dental procedures, and the delay or loss of follow-up appointments.

3.1.2.3 Limited oral health care facilities:

Oral health service providers and facilities are also insufficient. Although most (95%) oral health care services in Sierra Leone is privately owned, the private or government-controlled oral health care services are also sparsely and unevenly distributed.

3.1.2.4 Cost of oral health care services: Where oral health care facilities and personnel are available in the country, they can be very expensive for the general population. Dental examination costs on average roughly US$ 30, an out-of-pocket payment which is unaffordable for most, as a large proportion of the population live in poverty.

3.1.2.5 Quality of care: Oral health care providers may have a treatment rather than a prevention focus due to the barriers described earlier. Also, staff shortages across the wider oral health team affect patient care. For example, longer dental patient waiting times, consultations, prolonged dental procedures, and the delay or loss of follow-up appointments.

3.1.2.6 No dental training institutions: Sierra Leone currently has no dental school, but there are few health training institutions around the country that are now offering oral health and dental courses.[92] Currently, there are two private institutions that train dental therapists, while most of the advanced training of dentists is being undertaken abroad through foreign scholarship programmes. The country also periodically benefits from in-country dental training programmes provided by foreign partners who come on short-term visits.

3.1.3.7 Lack of oral health leadership: Sierra Leone lacks both a national chief dental officer and a national dental association that will provide systemwide professional and clinical leadership to fulfill the strategic vision for oral health. Additionally, even though a DoH exists, it functions within the Directorate of Hospital and Ambulance Services in the MoH, mainly providing clinical service and is not involved in public health interventions.

3.1.3 Opportunities

Despite the numerous oral health challenges in Sierra Leone, opportunities exist to surmount them. Many of these opportunities can be capitalized upon to produce an efficient oral health care service for Sierra Leoneans.

3.1.3.1 Integration of oral health into all agendas and policies: Oral health is not explicitly mentioned in national policies. However, embedding oral health within the wider health promotion, disease prevention and control of NCDs, and other health policies gives prospect to an integrated and cost-effective approach to tackling oral health.[93,94]

3.1.3.2 Community outreach: Community outreach teams including traditional healers, can be further leverage by DoH to deliver targeted oral health care services, and promote oral health,[95] including increasing the availability of fluorides across sectors and utilizing schools to promote the delivery of fluoride.[96]

[91] Ghotane SG, Challacombe SJ, Gallagher JE. Fortitude and resilience in service of the population: a case study of dental professionals striving for health in Sierra Leone. BDJ open. 2019;5:7.

[92]

[93] World Health Organization. Promoting health in all policies and intersectoral action capacities (2024). [Available from: https://www.who.int/activities/promoting-health-in-all-policies-and-intersectoral-action-capacities

[94] Fisher J, Berman R, Buse K, Doll B, Glick M, Metzl J, Touger-Decker R. Achieving oral health for all through public health approaches, interprofessional, and transdisciplinary education. NAM Perspect. 2023 Feb 13;2023:10

[95] March S, Torres E, Ramos M, Ripoll J, García A, Bulilete O, Medina D, Vidal C, Cabeza E, Llull M, Zabaleta-del-Olmo E, Aranda JM, Sastre S, Llobera J. Adult community health-promoting interventions in primary health care: a systematic review. Prev Med. 2015 Jul;76 Suppl:S94-104. doi: 10.1016/j.ypmed.2015.01.016. Epub 2015 Jan 24.

[96] Bramantoro T, Santoso CMA, Hariyani N, Setyowati D, Zulfiana AA, et al. (2021) Effectiveness of the school-based oral health promotion programmes from preschool to high school: a systematic review. PLOS ONE 16(8): e0256007

3.1.3.3 Advanced oral health training: There is a dearth of oral health knowledge in Sierra Leone. However, the country benefits from: (i) international scholarships/fellowships that facilitate study abroad for advanced courses, including degree programmes in oral health sciences; and (ii) short-term in-country dental scholarship training opportunities usually provided by medical experts. These opportunities could be increased as the country continues to forge new alliances, ensuring sustainability in doing so.[97]

3.1.3.4 Local, national and international partnerships: In addition to the existing health education unit of MoH, enhancing oral health promotion to community and population levels could be developed with the involvement of both local and international partners. Sierra Leone has strong links with multiple international health and voluntary organizations that can contribute to or partner with future health promotion programmes.[98,99,100]

3.1.1.5 Traditional practitioners: Many people rely on traditional medicines and practitioners for their health care needs, though exact numbers are not known. Traditional medical practice in Sierra Leone has now been structured into a national association and is recognized by both the central government and the communities. These practitioners may be able to contribute towards health promotion and signposting to available oral health services, for example, promoting the use of fluoride.[101]

3.1.4 Threats

3.1.4.1 Cost of fluoride: Sierra Leone was categorized as a country where fluoride toothpaste is unaffordable,[102] which poses a major threat to self-care and the success of oral health promotion.

3.1.4.2 Illiteracy level: The percentage of Sierra Leonean adults aged 15 years and above who can read and write in 2022 was 48.6%. Low education levels have been associated with many adverse health outcomes.[103]This may also exacerbate misinformation regarding oral health and the treatment of oral diseases.[104]

3.1.4.3 Harmful traditional cultural practices: Some cultural practices that involve inappropriate hygiene and sanitation exist.[105] A fear of surgical operations of any type, including oral health procedures, can lead to oral health care avoidance.

3.1.4.3 Resources for oral health care: Existing clinics have an acute shortage of appropriate instruments and equipment to perform basic dental procedures.

3.1.4.4 Counterfeit and expired drugs and quack doctors in the unregulated market: The health sector has been facing challenges with fraudulent medical practitioners and counterfeit drugs.

3.1.4.5 Increasing inequalities in oral health care access: The number of private dental clinics across Sierra Leone has increased. However, these clinics offer a myriad of essential oral health care benefits which, only a few patients can afford.

[97]World Health Organization Maximizing positive synergies collaborative group; Samb B, Evans T, Dybul M, Atun R, Moatti JP, Nishtar S, Wright A, Celletti F, Hsu J, Kim JY, Brugha R, Russell A, Etienne C. An assessment of interactions between global health initiatives and country health systems. Lancet. 2009 Jun 20;373(9681):2137-69. doi: 10.1016/S0140-6736(09)60919-3. Erratum in: Lancet. 2015 Apr 18;385:1510. Cailhol, Johann [added]

[98]King's College London. King's Sierra Leone Partnership. 2024 [available from: https://www.kcl.ac.uk/kslp

[99] USAID. Global Health. 2024 [available from: https://www.usaid.gov/sierra-leone/global-health

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[101]WHO global report on traditional and complementary medicine 2019. Geneva: World Health Organization; 2019. Licence: CC BY-NC-SA 3.0 IGO.

[102] WHO (2022). Oral health Sierra Leone 2022 country profile. available at: https://www.who.int/publications/m/item/oral-health-sle-2022-country-profile

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[104]Nancy D. Berkman, Stacey L. Sheridan, Katrina E. Donahue, et al. Low health literacy and health outcomes: an updated systematic review. Ann Intern Med.2011;155:97-107. [Epub 19 July 2011].

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2

Chapter

4. ORAL HEALTH STRATEGIC PLANNING

4.1 Strategic planning

The formulation of the NOHSP 2024–2030 alongside its strategic *vision, mission, roles, core functions* and *priority objectives* was derived through an in-depth inclusive consultation with members of the Oral Health Technical Working Group (OHTWG) (Annex 1) based on an extensive situational analysis. The process of developing the first oral health strategy for Sierra Leone started in November 2023. The period 2024–2030 saw the birth of the NOHSP 2024–2030 platform with the ensuing strategic document contained inputs from stakeholders from both the private and public sectors, including non-medical MDAs, international/national nongovernmental organizations, civil society, traditional healers, religious leaders, local councils, schools and universities.

The process was triggered by a general oral health stakeholders meeting which led to the formation of the OHTWG leading to the participatory formulation of a draft Oral Health Strategic Plan (OHSP). This draft OHSP was presented to the OHTWG members for review in early February 2024, followed by an in-depth review within an inclusive consultative stakeholders' meeting held on the 12 March 2024.

The participatory draft OHSP together with the comments and recommendations from participants at the inclusive consultative stakeholders' meeting was presented to a team of oral health experts and the WHO Consultant for final editing. The final OHSP document was later presented to a select team of OHTWG members for final approval and validation during a national validation workshop held in April 2024 where final corrections and inputs were captured to produce the NOHSP 2024–2030.

4.2 Vision, mission, guiding principles, role and priority objectives

4.2.1 Vision:

A nation where all people enjoy good oral health and have access to affordable prevention and oral health care, enabling them (or contributing) to lead a healthy and fulfilling life.

4.2.2 Mission:

To promote oral health; prevent and control oral diseases and conditions through adequate access to urgent care and community programmes that develop the workforce and take a public health approach where oral health is embedded across all policies.

NOHSP 2024–2030 priority objectives

1) Oral health governance: to strengthen oral health leadership, governance, network, partnership, collaboration, administration, and the provision of basic and essential oral health care;

2) Oral health promotion and prevention: to strengthen and expand oral health promotion and prevention activities in all health programmes at the national and community levels targeting oral health risk factors;

3) Oral health care: to integrate oral health services into the primary care level using the preventive approach; and

4) Oral health workforce: to train and equitably distribute the national oral health workforce across the country.

Table 4. Summary of priority objectives

Baseline (current situation)	Target for 2030
Priority objective 1: Oral health governance: to strengthen oral health leadership, governance, network, partnership, collaboration, administration, and the provision of basic and essential oral health care	
• Extremely limited budget for the Department of Oral Health; • No national leadership for oral health; • Lack of national oral health strategy; • Oral health is not integrated into NCDs.	• Published and implemented the Oral Health Strategy (2024–2027) with funding; • Established national leadership for oral health (Office of the Chief Dental Officer) in MoH, including a public health function; • Integration of DoH into the Directorate of NCDs; • Published and implemented the implementation plan for phasing down the use of dental amalgam.
Priority objective 2: Oral health promotion and prevention: to strengthen and expand oral health promotion and prevention activities in all health programmes at the national and community levels targeting oral health risk factors	
• No current policy to reduce the intake of free sugars; • No current guidance regarding the optimum use of fluoride; • No implementation of oral health promotion at school and community settings.	• Published and implemented policies to reduce risk factors for oral diseases; • Published and implemented national guidance for oral health promotion; • Published and implemented national guidance for the affordability and availability of established optimal fluoride for population oral health • 10% of primary schools having implemented oral health interventions, including forming oral health clubs, as a part of the health promoting schools programme; • Involve communities in oral health activities to take ownership.
Priority objective 3: Oral health care: to integrate oral health service into the primary care level using the preventive approach	
• No current implementation of oral health interventions at the primary care level, namely, peripheral health units (PHC).	• Published and implemented the implementation guidance to integrate oral health interventions at PHUs by leveraging the WHO-PEN approach.
Priority objective 4: Oral health workforce: to train and equitably distribute the national oral workforce across the country	
• Extremely limited oral health workforce of every cadre.	• Established an official dental therapist programme; • Published and implemented the national curriculum on oral health for primary care workers, including community health workers and traditional practitioners.

4.2.3 Role:

To provide a policy that will guide the Government of Sierra Leone and all stakeholders to establish structures and leadership that support the ambition to prevent and control oral diseases and conditions, as well as to promote oral health.

4.2.4 Guiding principles:

- **Commitment to the nation**: In line with the Sierra Leone national Constitution, this policy affirms the commitment to providing the highest standard of oral health attainable for the people of Sierra Leone. Through UHC, the NOHSP 2024–2030 will also ensure that Sierra Leoneans have access to the oral health care they need without suffering financial hardship.
- **Commitment to partnership and collaboration**: The NOHSP 2024–2030 is premised on the fact that the provision of oral health care requires an integrated approach that goes beyond the services provided by oral health care practitioners. Thus, the successful promotion and implementation of oral health care services in Sierra Leone will require the involvement of all stakeholders to address the wider determinants of health.
- **Commitment to equity:** As oral health care is disproportionately accessed by different subpopulations, this policy will guarantee access to safe oral health care for all Sierra Leoneans, particularly people living with disability (PLWD), without widening inequities.
- **Commitment to community participation**: The NOHSP 2024–2030 embraces the need to address oral health at the individual, family, and community levels.
- **Commitment to professionalism:** The delivery of oral health care is dependent on continuing professional development. To ensure prompt and professional oral health care delivery, the training and monitoring of oral health professionals has been incorporated.

4.2.5 Priority objectives and actions:

The overarching aim of the strategic policy is to provide sound oral health systems for every Sierra Leonean, based on the PHC principles and embedded into the general health care system of the country. The NOHSP 2024–2030 focuses on four priority objectives that are formulated and anchored on the *Sierra Leone Final Draft Oral Health Policy*, the 100 actions of the *Global Oral Health Action Plan 2023–2030*, and the proceedings of the plenary session of the National Oral Health Stakeholders' Consultative Conference held on 12 March 2024 in Freetown, Sierra Leone.

4.2.4.1 Priority objective 1:

To strengthen oral health leadership, governance, network, partnership, collaboration and administration:

i. advocate for the establishment of a dedicated and sustainable national budget for DoH;
ii. establish within MoH an office of the Chief Dental Officer with function of public health, to ensure national leadership;
iii. move DoH from the directorate of hospital and ambulance services into the directorate of NCDs
iv. review, reinforce and strengthen the oral health administrative structures at the national, regional and district levels, align their activities with other health related programmes within MoH and other MDAs, and integrate its programmes into all important programmes and structures relating to all interventions associated to NCDs;
v. advocate for the integration of oral health into all relevant health policies and programmes regarding the prevention of NCDs and promotion of water and sanitation; and
vi. collaborate with both the National Environmental Protection Agency to formulate an implementation plan on phasing down the use of dental amalgam, and with monitoring systems on the disposal of mercury used in the manufacturing of dental amalgam.

4.2.4.2 Priority objective 2:

To strengthen and expand oral health promotion and prevention activities in all health programmes at the national and community levels, targeting oral health risk factors:

i. collaborate within the NCD directorate to formulate policies (including the review of existing policies) that ban or control the sale and advertising of unhealthy products such as ultraprocessed and high free-sugar food and drinks, as well as alcohol and tobacco;
ii. develop national guidelines for oral health promotion and prevention to improve health literacy, including communication, in collaboration with health education and promotion unit;
iii. develop national guidelines for the affordability and availability of established optimal fluoride for population oral health, for example, fluoride varnish, rinses, toothpaste and water fluoridation

iv. include oral health activities/outreach, for example, skills-based oral health education (tooth brushing with fluoride toothpaste), forming oral health clubs, oral health screening and referral as part of the national health-promoting school activities as well as community outreach programmes.

4.2.4.3 Priority objective 3:

To integrate oral health service into the primary care level using the preventive approach:

i. redefine the oral health service package in the BPEHS, to promote the active integration of oral health into primary care and mobile health clinics;
ii. integrate essential dental preparation into the national essential medicine list to continue to provide oral health service with the sustainable procurement of essential dental preparation items;
iii. collaborate, strengthen, expand and integrate oral health programmes and services with other programmes at the primary care level with a preventive approach, for example, to integrate oral health as part of WHO package of essential noncommunicable disease interventions for primary health care (WHO-PEN) initiatives.

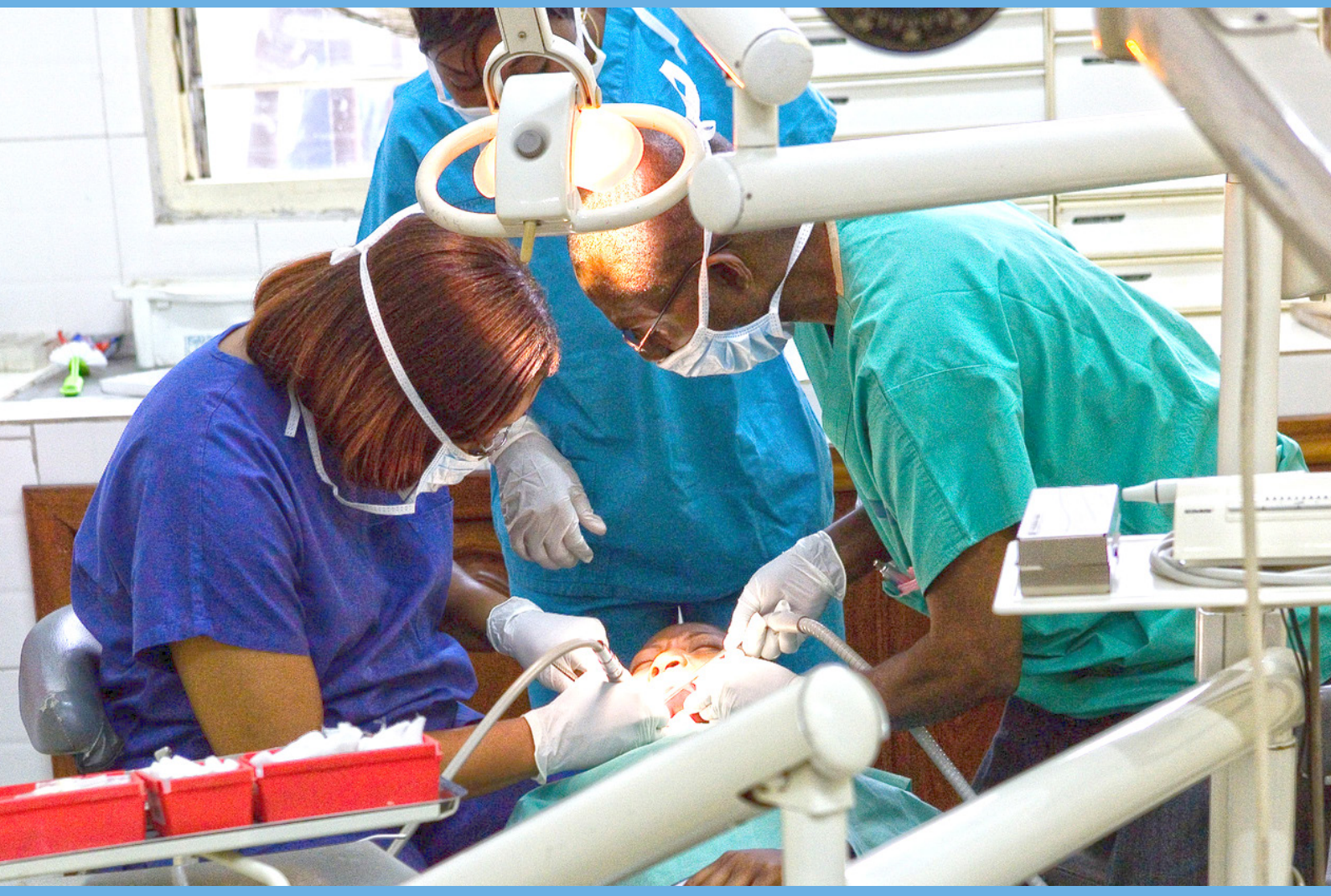
4.2.4.4 Priority objective 4:

To train and equitably distribute the national oral health workforce:

i. identify and address existing oral health workforce gaps (including the development of a plan) and challenges related to the training, distribution, and skills of oral health professionals at the national, regional and district levels;
ii. take a systems approach to the coordination work to ensure appropriate governance for higher education and training, including establishing dental therapists' programmes across the public, private and NGO sectors
iii. develop and train the existing and in-coming oral health workforce capacity, prioritizing oral health promotion and prevention; and
iv. prioritize the training of the wider health workforce, including traditional practitioners and community health workers, on oral health promotion and oral diseases prevention and control, including curriculum by leveraging existing resources.

3

Chapter



5. ORAL HEALTH STRATEGIC PLAN IMPLEMENTATION AND BUDGETING

5.1 Oral health awareness raising and sensitization

The implementation of the NOHSP 2024–2030 will require a multisectoral and departmental approach that will include various development and implementing partners. The strategic plan implementation will include the following:

i. an official launch of the NOHSP 2024–2030; and
ii. monthly district-level oral health awareness and sensitization campaigns to be facilitated by the various district council management and DHMT.

5.2 Dissemination of NOHSP 2024–2030

i. development of information, education and communication (IEC) materials, such as infographics and PowerPoint slides that can ease the dissemination of the NOHSP 2024–2030 to stakeholders and partners;
ii. distribution and dissemination of IEC to the wider public at locations such as town hall meetings, social gatherings, newspapers, social media and the marketplace, to raise awareness about the NOHSP 2024–2030 across all levels of society;
iii. make abridged and user-friendly (including brail and audio) versions of the NOHSP 2024–2030.
iv. holding of NOHSP 2024–2030 dissemination meeting in each provincial headquarter to be attended by the senior officers of DHMT and other civil administrators.

5.3 Roles and responsibilities

5.3.1 Formation of Oversight Administrative and Supervisory Implementation Committee

To operationalize the NOHSP 2024–2030, an oversight administrative and supervisory implementation committee will be established with a mandate to implement the NOHSP 2024–2030. It will be headed by DoH under MoH, and composed of DHMTs, and members of OHTWG. The implementing committee will meet quarterly and perform the following functions:

i. organize the NOHSP 2024–2030 stakeholders' group at the national and district levels;
ii. create annual oral health plans for both the national and district levels;
iii. provide technical support to the NOHSP 2024–2030 stakeholders group at the national and district levels;
iv. monitor and evaluate the implementation of the NOHSP 2024–2030; and
v. provide direction on new and innovative approaches to the NOHSP 2024–2030 as and when required.

5.3.2 Multisectoral and multidepartmental approach

The oversight administrative and supervisory implementation committee will be a basic but essential platform for mobilizing support of all sector oral health strategic plan targets and priorities (Table 5). The committee, which will also provide monitoring and evaluating systems to its members, be responsible for the following:

Table 5. Levels, functions and responsibilities of the oral health strategic plan oversight and implementation committee

Level	Functions and responsibilities
National Government	• Formulate policies and legislation, monitor and evaluate standards, ensure regulation, capacity-building, coordination, and provide technical assistance to various districts; • Establish, provide and commit to a dedicated DoH budget line; • Provide and ensure high-level political commitment to address oral health problems in unison with NCDs and UHC agendas (health in all policies approach); • Formulate, implement and enhance sustainable multisectoral collaboration and partnerships during implementation of the priority intervention in the NOHSP 2024–2030; • Provide leadership and coordinate the efforts and programmes of several stakeholders, implementing and development partners in line with the national NCD, PHC and UHC priorities; • Promote and support training, recruitment and retention of the oral health workforce; • Mobilize and empower communities to control and improve their oral health; • Support and promote the conduct of oral health research and document lessons learned on the various aspects of the NOHSP 2024–2030 priorities.
District Government	• Optimize, coordinate and evaluate oral health programmes and projects at district and local levels; • Provide support for capacity-building and technical assistance for the effective implementation of the NOHSP 2024–2030 • Mobilize and empower the communities to manage, control and improve general and oral health.
Medical, pharmaceutical and health regulatory	• Regulate all oral health professionals including dentists and therapists; • Ensure and sustain professional and ethical standards of oral health services and professionals; • Register and license oral health professionals based on their level of professional practice; • Serve as ombudsman for receiving and resolving complaints relating to professional misconducts from patients and other parties, including oral health professionals; • License, monitor and regulate oral health facilities; • License and monitor the sale of oral health products; and • Review and update the essential medicine list in line with global oral health standards.
Education and training	• Formulate, develop and implement national unified oral health training and teaching curricula that meet national and international standards; • Integrate basic primary oral health care into teaching and training across all health care areas; • Promote and recommend evidence-based approaches and practices for the management of oral diseases and conditions; • Embark on oral health research, document and share lessons learned on the various aspects of the NOHSP 2024–2030 priority and interventions to inform policy implementation.

Professional bodies and associations	• Provide technical advice, support and professional expertise on oral health matters at all levels; • Promote and enhance continuous professional development of oral health professionals; • Promote and support the welfare of oral health professionals; • Promote professional and ethical standards of oral health services and professionals.
Media	• Advocate, raise awareness and sensitize the citizenry on matters relating to oral health; • Disseminate oral health IEC materials; • Organize workshops/seminars to share lessons learned from oral health activities.
Implementing and development partners	• Advocate for increased political commitment from the national government to address oral health as a part of NCDs, embed oral health in other health programmes using a common risk factor approach; • Support with technical advice, guidance, tools and standards to develop and implement the NOHSP 2024–2030 priority objectives as part of the National Strategy for the Prevention and Control of NCDs; • Advocate and support the inclusion of basic oral health care services into the BPEHS; • Provide further investment for the implementation of the NOHSP 2024–2030.
Community,- family and individual levels	• Promote and enhance oral health and disease prevention at individual, family and community levels; • Promote and support the utilization of treatment and rehabilitation institutions for individuals suffering from oral diseases and conditions; • Participate in and support the setting out of priorities and designing oral health care services at the community level; • Participate in and support community-based oral health programmes and projects.

5.4 NOHSP 2024–2030 implementation matrix (Table 6)

Priority area	Priority actions	Implementation process (Concrete/tangible/breakdown)	Proposed action	Implementing MDAs/personnel	Timeline	Budget News Leonne (NLE)
1: To strengthen oral health leadership, governance, network, partnership, collaboration and administration	i. Advocate for the establishment of a dedicated and sustainable national budget for DoH.	Step 1: Conduct a needs assessment to determine whether to establish a dedicated and sustainable national budget for DoH	Review current DoH annual national budget, map out the needs and justifications for a dedicated and sustainable DoH national budget	DoH, Directorate of NCD, Directorate of Hospital and Ambulance Services, and Department of Finance Resources MoH	2024, Q3	120 000
		Step 2: Consultative meetings with stakeholders: such as MDA, NGO, INGOs, and CSOs to present, discuss and validate findings from Step 1	Validate findings from Step 1	DoH, Directorate of NCD, Directorate of Hospital and Ambulance Services, and Department of Finance Resources MoH	2024, Q4	150 000
		Step 3: National oral health stakeholders' meeting to present validated document from Step 2	Present, discuss and adopt the findings in Step 1 to the central government and other oral health stakeholders	DoH, Directorate of NCD, Directorate of Hospital and Ambulance Services, and Department of Finance Resources MOH	2025, Q1	120 000

	ii. Establish in MoH an office of the Chief Dental Officer to ensure national leadership, with function of public health	Step 1: Conduct needs assessment to determine the need for an office of Chief Dental Officer (CDO) that will ensure national leadership in the MoH with a public health function	Review current functions and status of DoH within the MOH organogram, map out the needs and justifications for an Office of CDO with equal capacity to that of the current CMO positions	CMO, DoH, Directorate of NCD, SLMDC	2025, Q1 - 2025, Q3	250 000
		Step 2: Consultative meetings with stakeholders: such as MDA, NGO, INGOs, and CSOs to present, discuss and validate findings from Step 1.	Validate findings from Step 1			150 000
		Step 3: National oral health stakeholders' meeting to present validated document from Step 2 above.	Present, discuss and adopt the findings in Step 1 to the central government and other oral health stakeholders			100 000
	iii. Move DoH from the directorate of hospital and ambulance services to the directorate of NCDs	Step 1: Review current national NCD policies to identify oral health components therein. Advocate through consultative oral health stakeholders' meetings for the relocation of DoH	Develop new national NCD policies with oral health components therein	DoH and the Directorate of NCD	2025, Q4	200 000

		from the Directorate of Hospital and Ambulance Services				
		Step 2: Develop policies across DoH and the Directorate of NCD to substantiate the relocation of DoH to the Directorate of NCD	Prioritize oral health in the strategic plan of the Directorate of NCD	DoH and the Directorate of NCD	2025, Q4	250 000
		Step 3: Develop strategic plans to enhance multidepartmental collaboration and partnerships between DoH and the Directorate of NCD to implement priority policy interventions for all NCDs including oral health.	Implement a multisectoral national NCD action plan including a monitoring and evaluation framework for the prevention and control of NCDs including oral diseases.	DoH, Directorate of NCD, and the Directorate of PHC	2026, Q1	150 000
	iv. Review, reinforce and strengthen the oral health administrative structures at the national, regional and district levels, as well as align its activities with	Step 1: Develop policy, legislation, standards and regulation align with other MOH and health related activities/programs to strengthen the DoH administration at all health system levels in Sierra Leone	Implement and fully monitor and evaluate actions taken in Step 1 at all levels in the health system in Sierra Leone	DoH, Directorate of NCD, and the Directorate of PHC	2026, Q1	150 000

	other health related programmes within MoH, and other MDAs, and integrate its programmes into all important programmes and structures involved in all NCD related interventions	Step 2: Build capacity through trainings/workshops/seminars, coordination, and provide technical assistance to all (including oral health) preventive interventions associated with NCDs. Establish DoH leadership at all levels led by a district dentist in every district in line with MoH structure.	Monitor and evaluate all preventive interventions associated with NCDs; Periodically assess and evaluate the DoH leadership at all levels within the health system in Sierra Leone.	DoH, Directorate of NCD, and the Directorate of PHC	2026, Q2	100 000
	v. Advocate for the integration of oral health into all relevant health policies and programmes on the prevention of NCDs and promotion of water and sanitation.	Step 1: Revise the Sierra Leone National Health Policy, UHC Roadmap, National Alcohol Policy, and national NCD policies for inclusion of oral health prevention approach	Monitor and evaluate all interventions in the various policies that are associated with oral health and oral diseases	DoH and the Directorate of NCD	2026, Q3	800 000
		Step 2: Conduct workshops/seminars to promote the National Water and Sanitation Policy	Monitor and evaluate all programmes/activities that promote the National Water and Sanitation Policy that are associated with oral health and oral diseases		2026 Q4	500 000

	vi. Collaborate with the Environmental Protection Agency to formulate an implementation plan on phasing down the use of dental amalgam, including monitoring systems on the disposal of mercury used in manufacturing dental amalgam.	Step 1: Develop a strategic plan for the national phase down of the use of dental amalgam in collaboration with EPA; implement such plan and monitor and subsequently evaluate the strategic plan at completion. Step 2: Organize national kickoff meeting of oral health stakeholders and EPA officials Step 3: Organize national wrap-up consultation meeting to outline format of the strategic plan Step 4: Design a participatory zero-draft of the strategic plan Step 5: Validate the participatory zero-draft of the strategic plan in a national validation workshop	Formulate, implement, monitor and evaluate the implementation of the national strategy for the national phase down of the use of dental amalgam	1) DoH and the Directorate of NCD to hire a consultant to formulate the strategic plan and offer leadership of the process 2) DoH, EPA and the Directorate of NCD		150 000

		Step 6: Present the validated strategic plan for the national phase down of the use of dental amalgam to MoH.				
2: To strengthen and expand oral health promotion and prevention activities in all health programmes at the national and community levels targeting oral health risk factors	i. Collaborate within the NCD directorate to formulate policies (including the review of existing policies) that ban or control the sale and advertising of unhealthy products such as ultraprocessed and high free-sugar foods and drinks, alcohol and tobacco	Step 1: DoH and the NCD Directorate conduct desk review of existing NCD policies on preventing unhealthy products such as ultraprocessed and high free-sugar foods and drinks, alcohol and tobacco	Identify gaps in NCD policies that fail to include interventions or reinforce the prevention of unhealthy products such as high free-sugar foods and drinks, alcohol and tobacco	DoH, the Directorate of NCD, the Consumers Protection Agency, the Directorate of Pharmaceutical Services, civil society organizations/agencies, the media	2027, Q1	150 000
		Step 2: Identify gaps in policies reviewed in Step 1				
		Step 3: Formulate a new policy based on the identified gaps in Step 2 as well as strengthen any desirable interventions it may contain	Formulate new NCD policy/policies that prevent unhealthy products such as high free-sugar foods and drinks, alcohol and tobacco nationwide	DoH/Directorate of NCD to hire consultant who will work with DoH, the Directorate of NCD, Consumers Protection Agency, Directorate of Pharmaceutical Services, civil society organizations/agencies, and the media	2027, Q2	300 000

	ii. Develop national guidance for oral health promotion and prevention to improve health literacy, including communication, in collaboration with health education and promotion unit	Step 1: Develop partnership with the health education unit (HEU) of MoH	Establish strong working relationship and collaboration with line MDAs	DoH and the Directorate of NCD	2027, Q3	20 000
		Step 2: Organize a workshop to develop national guidance for oral health promotion, improvement of oral health literacy and communications	Formulate a new National guidance for health promotion containing improved components of oral health literacy and communication	DoH/Directorate of NCD to hire the consultant	2027, Q4	250 000
		Step 3: Popularize the national guidance document formulated in Step 2 by conducting national awareness and sensitization workshops	Popularize the new and improved National guidance for health promotion	DoH, Directorate of NCD, health education unit, risk communication and community engagement	2028, Q1	150 000
	iii. Develop national guidance for the affordability and availability of established optimal fluoride for the population's oral health, for example, fluoride varnish, rinses,	Step 1: Desk review to determine the existence and level of implementation of a national guidance for the affordability and availability of optimal fluoride for the community's oral health	Identify the availability and gaps in implementation of a national guidance for the affordability and availability of optimal fluoride for population oral health	DoH/Directorate of NCD to hire a consultant	2028, Q2	200 000

	toothpaste and water fluoridation	Step 2: Organize a stakeholder workshop to develop a national guidance for the affordability and availability of optimal fluoride for the community's oral health, including fluoride compounds like fluoride varnish, rinses, toothpaste, and water fluoridation	Formulate a national guidance for the affordability and availability of optimal fluoride for the populations's oral health	DoH/Directorate of NCD and Directorate of Pharmaceutical Services	2028, Q3	200 000
	iv. Include oral health activities/outreach, for example, skills-based oral health education (tooth brushing with fluoride toothpaste), oral health screening	Step 1. Embark on oral health outreach programmes on awareness, prevention and screening of oral diseases	Conduct school/community outreach programmes to increase oral health awareness, oral disease screening, prevention and control	DoH, Directorate of NCD, Health Education Unit, risk communication and community engagement, Ministry of Basic Secondary Education,	2028 Q4	150 000

	and referral as part of the national health-promoting school activities as well as the community outreach programme	Step 2. Increase the number of schools/contact hours/oral health instructors delivering allied health programmes with oral health interventions Step 3: Establish oral health clubs in schools/communities	1) Conduct a census of the schools/instructors /contact hours delivering allied health programmes with oral health interventions within the school health education structure 2) Increase the number of oral health instructors in schools/increase the number of contact hours for oral health courses/lectures in schools 3) Increase the number of communities taking part in oral health awareness raising outreach programmes 4) Increase the number of oral health clubs in communities/schools	DoH, Directorate of NCD, health education unit, and the Ministry of Basic Secondary Education	2029 Q1	200 000

3: To integrate oral health service into the primary care level using the preventive approach	i. Redefine the oral health service package in the BPEHS, to promote the active integration of oral health into primary care and mobile health clinic	Step 1: Review the workshop on the BPEHS document. Step 2: Specifically identify gaps/areas within the BPEHS documents where the oral health can be hived into the primary health care level as well as into national mobile health clinic operation Step 3: Formulate a new BPEHS document with oral health fully integrated into primary care and the national mobile health clinic operation Step 4: Validate the new BPEHS document with oral health as an integral component of the primary care and national mobile health clinic operation.	Review the BPEHS document and eventually integrate oral health into the primary health care level using the preventive approach; as well as the inclusion of oral health into the national mobile health clinic operation	DoH, Directorate of NCD, Directorate of Policy, Planning and Implementation (DPPI) Consumers Protection Agency, Directorate of Pharmaceutical Services, civil society organizations/agencies, and the media	2029, Q1	500 000

	ii. Integrate essential dental preparation into the national essential medicine list to continue to provide oral health service with sustainable procurement of essential dental preparation items	Step 1: Review the national essential medicine list Step 2: Integrate essential dental preparation items into national essential medicine list Step 3: Formulate a revised national essential medicine list containing essential dental preparation items. Step 4: Validate and present revised national essential medicine list containing essential dental preparation items	Review and revise the national essential medicine list to integrate essential dental preparation items	Consultant hired by the DoH/Directorate of NCD	2029, Q2	100 000

	ii. Collaborate, strengthen, expand and integrate oral health programmes and services with other programmes at the primary care level with a preventive approach; for example, integrate oral health as part of WHO package of the essential noncommunicable disease interventions for primary health care (WHO-PEN) initiative	Step 1: Organize an exploratory workshop on expanding and integrating oral health programmes and services into other health care programmes Step 2: Desk review of the WHO-PEN document Step 3: Desk review of the NCD and PHC programmes Step 4: Revised NCD and PHC programme to include oral health in both programmes based on the preventive approach	Collaborate, network, and partner with other directorates, departments and units at the MOH	DoH, Directorate of NCD, Directorate of Primary Health Care, Health Education Unit	2029, Q3	120 000
			Expand and integrate the oral health preventive approach into the WHO-PEN initiative at the primary care level	DoH, Directorate of NCD, and the Directorate of Primary Health Care	2029, Q4	200 000
4: To train and equitably distribute the national oral health workforce	i. Identify and address existing oral health workforce gaps (including the development of a plan) and challenges	Step 1: Conduct a desk review, field visits and workforce census of the DoH human resource workforce	Conduct a census and mapping of the DoH staff in order to assess the strength of the DoH	DoH, Directorate of Hospital and Ambulance Services, and Human Resources and Management Office (HRMO)	2030, Q1	500 000

	regarding the training, distribution, and expertise of oral health professionals at the national, regional and district levels	Step 2: Based on the findings of the desk review, field visit and census in Step 1, develop a strategic plan to improve the DoH workforce	Provide mechanisms/strategies to upgrade the current DoH capacity/strength as well as equitably distribute DoH workforce	DoH, Directorate of NCD, Directorate of Hospital and Ambulance Services, and HRMO	2030, Q1	500 000
		Step 3: Conduct a needs assessment tour of all dental facilities nationwide	Obtain first-hand knowledge of the dental facilities existing nationwide	DoH, Directorate of NCD and Directorate of Hospital and Ambulance Services	2030, Q1	350 000
		Step 4: Embark on field visits to all allied health and dental training institutions nationwide	Obtain first-hand knowledge of the logistic requirements and status of dental therapist training institutions nationwide	DoH, Directorate of NCD and Directorate of Hospital and Ambulance Services	2030, Q2	200 000
		Step 5: Note the current logistic needs of dental therapist training institutions nationwide	Obtain first-hand knowledge of the logistic requirements and status of dental therapist training institutions nationwide	DoH, Directorate of NCD and Directorate of Hospital and Ambulance Services	2030, Q2	100 000

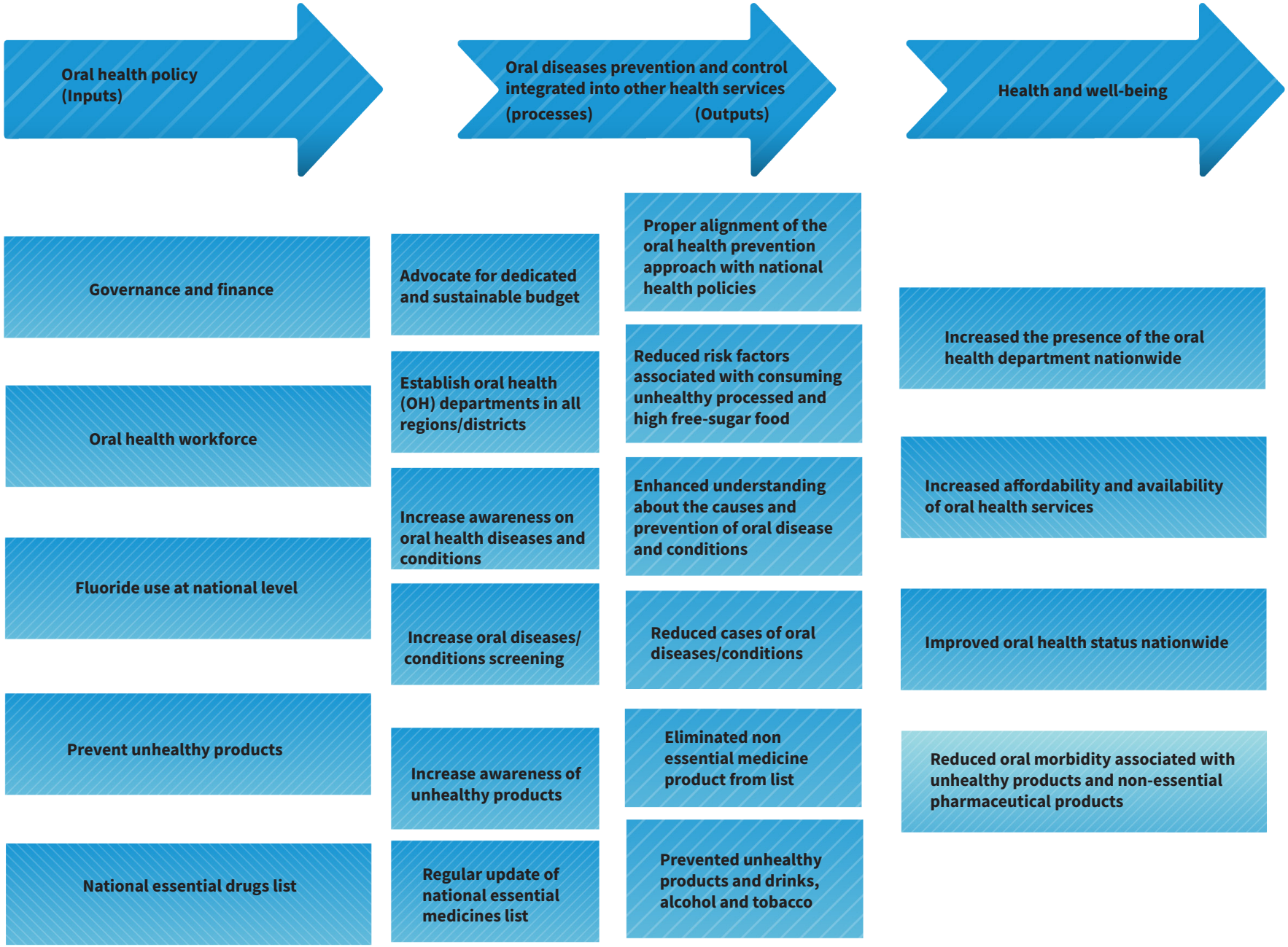
		Step 6: Conduct an assessment of the teaching modules of oral health courses delivered at the allied health and dental therapist training institutions, as well as upgrade these modules	Improve the quality of the oral health modules taught at the allied health and dental therapist training institutions nationwide	DoH, Directorate of NCD, MOH, TEC, Ministry of Tertiary Higher Education	2030, Q2	500 000
	ii. Take a systems approach to the coordination work to ensure appropriate governance in higher education and training, including the establishment of dental therapy programmes across the public, private and NGO sectors	Step 1: Embark on field visits to all allied health and dental training institutions nationwide	To map out geographical distribution of all allied health and dental training institutions nationwide	DoH, Directorate of NCD, MOH, TEC, Ministry of Tertiary Higher Education	2030, Q2	20 000
		Step 2: Establish networks and partnerships with the relevant and appropriate dental therapist training institutions nationwide.	Collaborate and establish networks with all relevant oral health training institutions	DoH, Directorate of NCD, MOH, TEC, Ministry of Tertiary Higher Education	2030, Q2	150 000
		Step 3: Establish partnerships with the Tertiary Education Commission (TEC), and the Ministry of Tertiary Higher Education (MTHE)	Collaborate and establish networks with TEC and MTHE with the purpose of upgrading the dental therapist training institutions nationwide	DoH, Directorate of NCD, MOH, TEC, Ministry of Tertiary Higher Education	2030, Q3	50 000

		STEP 4: Conduct an evaluation of all the oral health modules used at the various allied health and dental therapist training institutions nationwide	Assess all the oral health modules at all allied health and dental therapist training institutions nationwide	DoH, Directorate of NCD, MOH, TEC, Ministry of Tertiary Higher Education	2030, Q3	300 000
		Step 5: Unify the various oral health modules used in all allied health and dental therapist training institutions nationwide	Design and present a national unified oral health modules to be use in all allied health and dental therapist training institutions nationwide	A consultant hired by the DoH/Directorate of NCD/MOH	2030, Q3	500 000
	iii. Train and develop the capacity of the existing and in-coming oral health workforce, prioritizing oral health promotion and prevention	Step 1: Design a short oral disease prevention and control module that can be used in all allied health and dental therapist training institutions	Design a short unified oral disease prevention and control course module to be used nationwide	A consultant hired by the DoH/Directorate of NCD/MOH	2030 Q3	300 000
		Step 2: Design short oral health courses of at least three months duration with special focus on oral disease prevention and control for staff currently employed at the DOH	Design a capacity-building oral health course for in-service DOH personnel	A consultant hired by the DoH/Directorate of NCD/MOH	2030, Q3	100 000

		Step 3: Liaise with the Ministry of Foreign Affairs and International Cooperation to establish bilateral relation with neighbouring countries including Rwanda/Nigeria in order for partners to send oral health professionals to Sierra Leone to train the current and in-coming staff of the DOH	Secure the expertise of oral health professionals from neighbouring countries to train DOH staff	DoH, Directorate of NCD, MOH, TEC, Ministry of Tertiary Higher Education	2030, Q4	1 000 000
	iv. Prioritize the training of health workforce in the broader sense, including traditional practitioners and community health workers, on oral health promotion, oral diseases prevention and control, as well as on curriculum design by leveraging existing resources	Step 1: Partner and collaborate with the traditional healers association, Directorate of Clinical Services, and Health Education Unit to organize a consultative workshop on the designing of a training curriculum with a specific focus on oral health promotion, oral disease prevention, and control based on existing materials such as WHO online course on oral health for community health workers:	Kick-start discussions and consultation for the formulation of a training curriculum with specific focus on oral health promotion, oral diseases prevention and control	DoH, Directorate of NCD, MOH, TEC, Ministry of Tertiary Higher Education, Ministry of Basic and Senior Secondary School Education	2030, Q4	150 000

		https://openwho.org/courses/oral-health-community-AFRO				
		Step 2: Conduct workshops/seminars to design a new oral health promotion, oral diseases prevention and control curriculum from the existing curriculum	Design a national unified oral health training curriculum with focus on oral health promotion, oral disease prevention and control	Consultant hired by the DoH/Directorate of NCD	2030, Q4	500 000
		Step 3: Organize validation workshops/seminars to validate and finally adopt the health promotion, oral diseases prevention and control curriculum designed in Step 2.	National oral health stakeholders validate the newly designed training curriculum that focuses on oral health promotion, and oral diseases prevention and control	DoH, Directorate of NCD, MOH, TEC, Ministry of Tertiary Higher Education, Ministry of Basic and Senior Secondary School Education	2030, Q4	100 000
GRAND TOTAL		**NLE 11 050 000**				

5.5 Monitoring Framework of the OHSP 2024-2030 (Fig. 2)



National Oral Health Technical Working Group

No.	Ministry/Department	Name	Position/Title	Phone number
1.	Ministry of Health	Dr Sartie Kenneh	Chief Medical Officer	+23276644009
2.	Ministry of Health (OH Dept)	Dr David Idris Kamara	Principal Dental Officer and Head of Oral Health (OH) Department	+23276607853
3.	Ministry of Health (OH Dept)	Dr Alhassan Sheriff	Oral Health Staff Rep	+23276580858
4.	Ministry of Health (Clinical)	Dr Mustapha Kabba	Deputy Chief Medical Officer (Clinical)	+23288927869
5.	Ministry of Health (Directorate NCD)	Dr Santigie Sesay	Director, Noncommunicable Diseases	+23276604658
6.	Ministry of Health (Directorate PHC)	Dr Osaio Kamara	Director, Primary Health Care	+23276640141
7.	Ministry of Health (Medical and Dental Council)	Dr T.B Kamara	Registrar, Medical and Dental Council, Sierra Leone	+23276688430
8.	Ministry of Health (Pharmacy)	Dr J.P Komeh	Registrar, Pharmacy Board Sierra Leone	+23276631014
9.	Ministry of Health (Nurses and Midwives Council, Sierra Leone)	Matron Mary Fullah	Chief Nursing and Midwife Officer (CNMO)	+23276688329
10.	World Health Organization	Mr Fredric Kuti- George	World Health Organisation	+23276706509
11.	Inter-Religious Council	Dr Osman Fornah	Sec. General	+23276606194
12.	Civil Society Group	Victor Lansana Koroma	CEO of Health Alert	+23276758511
		Mr Charles Mambu	CEO of Health for All Coalition	+23276623428

13	Media	1	SLBC TV/Radio journalist: Asmieu Bah	+23278445300
		1	AYV TV/Radio journalist	+23288203848
14.	Kings College Partnership	1	Representative from Kings College Partnership in Sierra Leone	+232
15.	WHO Consultant	Dr Jia Bainga Kangbai	Njala University, Sierra Leone	+23276900358
16.	National Public Health Agency	Professor Foday Sahr	Executive Director	+23276480288
17.	The Sierra Leone Indigenous Traditional Healers Union	Dr Abdul Bangura	Country Director Traditional Medicine, Traditional Healers	+23276394801
18.	Sierra Leone Union on Disability Issues	Mr Sallieu Turay	Acting President	+23277383231
19.	USL/COMAHS	Professor Mohamed Samai	Deputy Vice Chancellor	+232 78 841262
20.	NU/SCHS	Dr Ke Rogers	Head of Department, Department of Public Health	+23279584026
21.	Choithram Dental Clinic	Dr Amadu Mahdi	Private Dental Practitioner	+23276862052
22	Beale's Community Dental Centre	Dr George Morgan	Private Dental Practitioner	+23276657964
23.	Ping Kang Dental College	Dr Ahmed Al-Hassan Sheriff	CEO/Principal	+232
24.	Amsa Dental College		CEO/Principal/Rep	+232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