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Review Article

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NEGLECTED TROPICAL PARASITIC DISEASES IN NIGERIA: Current Trends, Epidemiological Burden and the Road to 2030 Elimination Targets

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Abstract

Nigeria sustains a disproportionate share of the global neglected tropical disease (NTD) burden, accounting for approximately 25% of the global NTD disease burden and about 50% of Africa's burden, with over 100 million people at risk. Among the most clinically significant are the neglected tropical parasitic diseases (NTPDs) like lymphatic filariasis, onchocerciasis, schistosomiasis, soil-transmitted helminths, yaws and human African trypanosomiasis. This review article synthesizes current epidemiological trends, programmatic progress, funding dynamics and emerging challenges in Nigeria's NTD landscape. Nigeria has achieved significant milestones in the eradication of Guinea worm disease (2013), an 84% reduction in trachoma in at-risk populations and onchocerciasis elimination in Plateau and Nasarawa States. However, the sudden withdrawal of USAID funding in 2025, which historically supported 3.3 billion treatments in 26 countries, has threatened mass drug administration (MDA) campaigns and threatens to change decades of progress. Schistosomiasis and soil-transmitted helminth coverage remain below WHO's 75% target. The re-emergence of yaws, insecurity in endemic northern states, regulatory bottlenecks delaying donated medicine importation and climate-driven vector expansion further aggravates the challenge. Nigeria has responded with a National NTD Master Plan (2023–2027), and 21 of 36 states have established dedicated NTD budget lines in their 2025 Medium Term Expenditure Frameworks. This review article argues that achieving the WHO 2030 NTD Roadmap targets requires urgent scaling of domestic financing, integration of NTD services into routine primary healthcare and a whole-of-government approach to surveillance and program delivery.

Keywords: Neglected Tropical Diseases, Nigeria, Lymphatic Filariasis, Onchocerciasis, Schistosomiasis, Mass Drug Administration, Antimicrobial Resistance, WHO 2030 Roadmap

1. Introduction

Neglected tropical diseases (NTDs) are a diverse group of 21 communicable conditions recognized by the World Health Organization (WHO) that predominantly affect populations living in poverty in tropical and subtropical areas of Africa, Asia and the Americas [1]. They cause significant morbidity through blindness, disfigurement, chronic disability, social stigma and malnutrition, yet continue to attract disproportionately limited global health funding relative to their burden [2]. Globally, approximately one billion people are still affected by NTDs [1]. International advocacy has drawn growing attention to the global NTD burden and to the fact that substantial improvements can be achieved at relatively low cost. Targeting this group of diseases is widely promoted as a means of progress towards the health-related Sustainable Development Goals [3]. Some NTDs occur in the same geographical areas and can be treated with the same drugs, creating potential for integrating control activities, both within this group of diseases and with other interventions [3].

In Nigeria, the burden of NTDs is most pronounced: among all African nations, Nigeria has the greatest number of people infected with NTDs [4,5]. Nigeria is reported to account for about 25% of the global NTD burden and about 50% of Africa's burden, although the Minister of State for Health has cited a figure of 25% of Africa's

NTD cases [6,7]. For instance, Nigeria has the greatest number of cases of lymphatic filariasis and onchocerciasis in Africa, ranking third and first globally, respectively, and accounting for one-fourth or more of the global burden of these two diseases [5]. In addition, an estimated 18 million Nigerians were at risk of trachoma and nearly 1.3 million were living with trichiasis (2012 estimates) [5]. The high burden of NTDs calls for effective public health strategies in the control of these diseases, especially regarding the social determinants of health. The Minister of State for Health reported in 2025 that 165 million people in Nigeria require preventive chemotherapy for at least one NTD [7].

Over 100 million Nigerians are at risk of at least one NTD, and 771 out of 774 Local Government Areas (LGAs) are affected according to official national records [6]. Of the 21 NTDs listed by WHO, 15 are endemic in Nigeria [6], and parasitic infections (lymphatic filariasis (LF), onchocerciasis, schistosomiasis and soil-transmitted helminths (STH)) are the predominant contributors to the disease burden [5]. Stigma is widely regarded as one of the main barriers to the control and elimination of NTDs in Nigeria [8]. It refers to negative attitudes, beliefs and behaviors directed towards people affected by NTDs, and often results in discrimination and social exclusion [8,9]. Stigma is a socially and culturally driven process, and it can delay health-seeking because affected persons fear being ostracized or ridiculed by their communities [8].

The WHO NTD Roadmap 2021-2030, endorsed through World Health Assembly decision WHA73(33), sets ambitious targets: eradication of dracunculiasis, elimination of lymphatic filariasis and onchocerciasis as public health problems, and control of schistosomiasis and soil-transmitted helminth morbidity by 2030 [1,3]. Nigeria has made notable progress, including Guinea worm disease eradication in 2013, onchocerciasis elimination in Plateau and Nasarawa States, and about 84% reduction in trachoma infection prevalence among at-risk populations [7]. However, the sudden withdrawal of USAID NTD program funding in 2025, which historically supported over 3.3 billion treatments across 26 countries, has endangered ongoing mass drug administration (MDA) campaigns and threatens to unravel years of investment [1]. This review journal comprehensively examines the current epidemiological burden, programmatic trends, emerging threats, funding landscape and the strategic outlook for NTPDs in Nigeria. It integrates recent surveillance data, policy developments and expert analyses to provide an evidence-based appraisal of Nigeria's NTD path as it approaches the critical 2030 horizon.

2. Epidemiological Overview of Main NTPDS In Nigeria

There is some debate among the WHO, the CDC and infectious disease experts over which diseases are classified as neglected tropical diseases. Feasey et al. discuss 13 neglected tropical diseases, which include ascariasis, dracunculiasis, hookworm infection, human African trypanosomiasis, leishmaniasis, leprosy, lymphatic filariasis, onchocerciasis, schistosomiasis, trachoma and trichuriasis, while Fenwick recognises 12 “core” neglected tropical diseases: the same as above, excluding hookworm [2,10]. These diseases result from three classes of causative pathogens:

- Protozoa (human African trypanosomiasis and leishmaniasis)
- Bacteria (leprosy, trachoma, and yaws)
- Helminths or metazoan worms (dracunculiasis, lymphatic filariasis, onchocerciasis, schistosomiasis, and soil-transmitted helminthiasis)

2.1. Lymphatic Filariasis (LF)

Lymphatic filariasis (LF), also known as elephantiasis, is primarily caused by Wuchereria bancrofti and transmitted by Culex mosquitoes. LF is rarely fatal but has lifelong implications like lymphoedema of the limbs, genital disease and painful recurrent attacks [11]. Most people are asymptomatic but have lymphatic damage. Nigeria carries the highest burden of LF among all endemic countries in Africa [5,11]. A 2024 review revealed an overall LF prevalence of 11.18% nationally, with regional variation of North Central and North East (4.52%), South-South and South East (3.81%), Northwest (1.59%), and South West (1.26%) [11]. The disease is endemic in 520 out of 774 LGAs [12]. The clinical manifestations of lymphatic filariasis documented in Nigeria include hydrocele, lymphoedema, elephantiasis, hernia and dermatitis, with a combined morbidity rate of 31.12% among positive cases [11].

Since 2014, mass drug administration with ivermectin combined with albendazole has achieved treatment coverage of approximately 65%, meeting the WHO threshold [11]. Elimination of lymphatic filariasis has been achieved in Argungu LGA (Kebbi State), Plateau State and Nasarawa State [11]. As at 2021, lymphatic filariasis was nearly eliminated from 37 LGAs, showing that scale-up of the remaining activities is urgently needed [12]. A Gates Foundation-supported project, extended through September 2025, facilitated community-based impact and surveillance surveys across eligible LGAs, accelerating ivermectin treatment stopping decisions [13].

2.2. Onchocerciasis (River Blindness)

Onchocerciasis, also known as river blindness, is caused by a pathogen called Onchocerca volvulus and transmitted by blackflies (Simulium spp.) breeding along fast-flowing rivers. Over 99% of cases of onchocerciasis are in sub-Saharan Africa. It causes blindness, skin rashes, lesions, intense itching and skin depigmentation [14]. It has historically been one of Nigeria's most disabling NTDs, producing progressive blindness and debilitating skin disease. Nigeria has made substantial strides, with two states (Plateau and Nasarawa) having interrupted onchocerciasis transmission, and 61 LGAs almost at the elimination stage as of 2021 [12]. Treatment coverage through community-directed treatment with ivermectin (CDTI) has exceeded the 65% WHO target nationally.

However, the landscape post-2025 is hanging in the balance. USAID's exit has disrupted mass treatment campaigns [1], and the Gates Foundation-supported project to assess lymphatic filariasis and onchocerciasis and stop ivermectin treatment, which was extended through September 2025, has now concluded [13]. Future MDA continuation for onchocerciasis will depend heavily on domestic financing and alternative partnerships. Notably, a

recent analysis suggests that MDA for onchocerciasis in Africa fell sharply after 2024, as many areas approach elimination thresholds [15].

2.3. Schistosomiasis (Bilharzia)

Schistosomiasis, also known as bilharzia, is caused by Schistosoma haematobium (urogenital form) and S. mansoni (intestinal form). It is transmitted through contact with freshwater contaminated by cercariae released from infected freshwater snails [16]. Nigeria is estimated to have the largest number of schistosomiasis cases of any country in the world [5]. In Nigeria, it notably affects school-age children in rural and peri-urban communities near water bodies, causing haematuria, anaemia and malnutrition. In chronic cases, it causes bladder cancer, renal failure, periportal fibrosis, bladder fibrosis, liver fibrosis (hepatosplenomegaly), portal hypertension, cervical lesions, ascites and oesophageal varices [16]. Nigeria has consistently failed to meet WHO's 75% preventive chemotherapy (PC) coverage target for schistosomiasis [12]. Program coverage has been undermined by inadequate WASH (water, sanitation and hygiene) infrastructure, poor community engagement and supply chain disruptions. In Imo State, the program assessments were delayed by more than five years and were concluded in December 2025 [6]. The COVID-19 pandemic caused the lowest recorded coverage in 2020–2021. Furthermore, flooding and other climate-related changes may create additional snail habitats and expand or shift schistosomiasis transmission zones, raising concern about future incidence [17].

2.4. Soil-Transmitted Helminths (STH)

The main soil-transmitted helminths infecting humans are Ascaris lumbricoides, Trichuris trichiura and the hookworms (Ancylostoma duodenale and Necator americanus), Strongyloides stercoralis is also transmitted through soil [18]. They collectively represent the most common NTDs among Nigerian children: Nigeria has the largest number of STH infections in Africa, with estimates of about 55 million cases of ascariasis, 38 million of hookworm infection and 34 million of trichuriasis (2012 estimates, individuals may carry more than one species) [5]. They are transmitted through contaminated soil and faeco-oral routes, thriving in communities with deficient sanitation. The clinical consequences in children include chronic malnutrition, iron-deficiency anaemia, cognitive impairment, stunted development and school absenteeism, thereby crippling the nation's human capital formation. The severity of symptoms depends on the number of worms in the body [18].

Soil-transmitted helminth control in Nigeria falls below the WHO 75% MDA coverage target, as with schistosomiasis. Programmatic delivery is largely school-based [12], which excludes pre-school children and adults who represent a significant reservoir. UNICEF reports that 126 of Nigeria's 774 LGAs have been certified open-defecation free, although about 47 million Nigerians still practice open defecation [19], indicating that WASH–NTD integration is promising but incomplete. These gains are geographically uneven, with northwestern and northeastern states experiencing lower coverage due to insecurity and weak health infrastructure [6].

2.5. Human African Trypanosomiasis (HAT)

Human African trypanosomiasis (HAT), also known as sleeping sickness, is caused by Trypanosoma brucei gambiense in West and Central Africa, which accounts for the large majority of reported cases, and is transmitted by tsetse flies (Glossina spp.). The most common symptoms are fever, headache, lymphadenopathy, sleeping disturbances, personality changes, cognitive decline and coma. HAT threatens millions of people in sub-Saharan Africa [20]. In Nigeria, human African trypanosomiasis has a relatively low reported incidence, though under-diagnosis is a recognized limitation due to limited passive surveillance capacity. Although WHO has not reported HAT from Nigeria in the last decade, published studies document seroprevalence, parasite detection and animal reservoirs potentially involved in transmission [21]. In 2011, three positive cases were recorded (two in Delta and one in Niger State) [21]. More recently, HAT was found to occur in several LGAs in Delta and Niger States, and some seropositive individuals were recorded in Edo State, which calls for more robust screening [21]. These results suggest that HAT may still be endemic in the country, and there is an urgent need to determine the current level of endemicity throughout Nigeria. Active screening programs and tsetse fly vector control remain the primary interventions [20]. WHO targets elimination of HAT as a public health problem by 2030, defined as fewer than 2,000 reported cases annually and no more than 1 case per 10,000 people in moderate-to-high-risk areas [3].

2.6. Guinea Worm Disease (Dracunculiasis)

Dracunculiasis, also known as Guinea worm disease, is caused by the large nematode Dracunculus medinensis. It is transmitted through the ingestion of water contaminated by water fleas (copepods) infected with Guinea worm larvae. Approximately one year after infection, a painful blister forms and one or more worms emerge [22]. Through the national Guinea Worm Eradication Program, supported by the Carter Center and partners, which combined water filtration, vector control and community education, Nigeria achieved eradication in 2013 [7]. In 1986, Nigeria accounted for approximately 75% of the world's estimated 3.3 million cases [5]. This achievement contributed to the global reduction from approximately 3.5 million annual cases in the mid-1980s to very few cases today [23]. It stands as a testament to what coordinated, sustained, community-based intervention can accomplish, and established a replicable model for other NTPDs.

2.7. Yaws

Yaws is mainly a disease of children, caused by Treponema pallidum subspecies pertenue. It is a contagious bacterial infection transmitted through direct skin contact. It predominantly affects children in humid tropical areas. The mortality risk is very low, but the disease causes disfigurement and disability if untreated. The most common symptom is skin lesions [24]. Yaws was highly endemic in Nigeria in the mid-twentieth century, and eradication campaigns markedly reduced its burden [25]. Media reports citing program sources describe its re-emergence in Nigeria after it had been eliminated in 1945, which raises serious concerns [6]. However, an active case search among 105,015 schoolchildren

in south-eastern Nigeria found no laboratory-confirmed case [25]. This highlights the vulnerability of disease elimination to discontinuity of surveillance and control mechanisms, and the need for continued case finding. The WHO targets global yaws eradication by 2030, primarily through single-dose azithromycin treatment, the disease can also be prevented through hygiene and sanitation [3,24]. Active case detection and targeted Mass Drug Administration in re-emerging foci are urgently required.

2.8. Leprosy

Leprosy is a chronic infectious disease caused by Mycobacterium leprae. It is transmitted mainly through droplets from the nose and mouth during close and frequent contact with untreated cases. The disease mainly affects the skin, the peripheral nerves, mucosal surfaces of the upper respiratory tract and the eyes. Leprosy is known to occur in all ages, from early infancy through adult life [26]. In Nigeria, leprosy remains a disease of public health importance, with more than 2,000 new cases reported annually, in a 17-year review from Lagos, about 25% of patients presented with Grade 2 disability [27]. Research from Lagos showed that many patients present with multibacillary disease and late presentation [27]. Weak surveillance and limited specialist capacity continue to contribute to disability and morbidity [27]. Stigma and discrimination against persons and communities affected by leprosy in Nigeria are very high, due to myths, cultural beliefs and fear of contagion [28,29]. Although leprosy is curable with multidrug therapy, access to treatment has been affected by supply disruptions: in 2024 Nigeria experienced a serious delay and shortage of multidrug therapy linked to regulatory and bureaucratic bottlenecks, and the 2025 consignment had not been received as at early 2026 [6].

2.9. Trachoma

Trachoma is an eye disease caused by the bacterium Chlamydia trachomatis. It spreads via direct contact with eye/nasal discharges (hands, fomites) and mechanically by eye-seeking flies [30]. Nigeria is among the countries with the highest trachoma burden in Africa, with an estimated 18 million people at risk and nearly 1.3 million living with trichiasis (2012 estimates) [5]. Trachoma is one of the causes of avoidable blindness. Globally it is the leading infectious cause of blindness [30]. The disease is of public health significance in many LGAs, mainly in the northern part of the country, which falls within the trachoma belt [31]. It disproportionately affects children and women in the most vulnerable communities. Repeated infection, mainly among children, leads to scarring of the tissue lining the underside of the eyelid.

This scarring eventually causes the eyelid to turn inward, allowing the eyelashes to rub against and abrade the cornea [30]. This painful condition, called trichiasis (TT), can result in irreversible blindness. By the end of 2020, baseline population-based prevalence surveys had been conducted in 449 LGAs. Of these, 122 LGAs had an active trachoma prevalence above the elimination threshold and required antibiotic mass drug administration, while 231 LGAs required community-based interventions for trichiasis management [31]. Systematic trichiasis case finding in these LGAs resulted in the management of 102,527 people [31]. Baseline surveys were still outstanding in 14 LGAs in Borno State because of insecurity [31].

3. Summary Tables

Disease	Causative Parasite	Vector/Route	Estimated Burden in Nigeria	WHO 2030 Target
Lymphatic Filariasis (LF)	*Wuchereria bancrofti*	Mosquito (Culex spp.)	Highest burden in Africa, prevalence 11.18%, 520 of 774 LGAs endemic	Elimination
Onchocerciasis	*Onchocerca volvulus*	Blackfly (Simulium spp.)	~37 million at risk, eliminated in Plateau & Nasarawa States	Elimination of transmission
Schistosomiasis	*Schistosoma haematobium / S. mansoni*	Freshwater snails	Largest number of cases worldwide (~29 million, 2012 estimate), treatment coverage <75%	Control / Elimination in select areas
Soil-Transmitted Helminths (STH)	*Ascaris, Hookworm, Trichuris*	Faeco-oral / skin contact	Most common NTDs in children, largest number of STH infections in Africa	Control (morbidity)
Trypanosomiasis (HAT)	*Trypanosoma brucei gambiense*	Tsetse fly (Glossina spp.)	Low incidence, endemic in several states	Elimination as public health problem
Guinea Worm (Dracunculiasis)	*Dracunculus medinensis*	Contaminated water	ERADICATED in Nigeria (2013)	Global eradication
Yaws	*Treponema pallidum pertenue*	Direct contact	Re-emerging after elimination in 1945	Elimination
Leprosy	*Mycobacterium leprae*	Respiratory droplets	Second highest registered prevalence in SSA	Elimination (<1/10,000)
Trachoma	*Chlamydia trachomatis*	the eye-seeking fly (Musca domestica and Liohippoelates spp.)	~18 million at risk (2012 estimate), 122 LGAs require antibiotic MDA	Elimination as public health problem

Table 1: Major Neglected Tropical Parasitic Diseases in Nigeria, Their Causative Agents, and Who 2030 targets. Source: Compiled From [1,3,5,6,11,12,31].

NTD	WHO Coverage Target	Nigeria Coverage (2021)	Target Met?	Key Gap / Challenge
Lymphatic Filariasis	65%	~65%	✓ Yes	37 LGAs nearing elimination, 520 LGAs still endemic
Onchocerciasis	65%	~65%	✓ Yes	2 states eliminated, 61 LGAs near elimination
Schistosomiasis	75%	<75%	✗ No	Low MDA coverage, inadequate WASH infrastructure
Soil-Transmitted Helminths	75%	<75%	✗ No	Coverage gaps in NW and NE, COVID-19 disruption
Yaw	90%	no confirmed indigenous cases of yaws	✓ Yes	Is the diagnostic gap
Trachoma	80%	~84% reduction in at-risk population	Partial	Active surveillance needed, SAFE strategy ongoing
Guinea Worm (Dracunculiasis)	85%	100%	✓ Yes	Remote Geographies & Insecurity, Animal Reservoirs
Leprosy	70%	<1/10,000	✓ Yes	Late diagnosis and disabilities, hidden hotspot and stigmatization
Trypanosomi+asis (HAT)	Zero new case	Not focusing on the at-risk population	Partial	Insurgency & Security, Remote Rural Access and Silent Transmission & Undercounting
MDA = Mass Drug Administration, WASH = Water, Sanitation and Hygiene.				

Table 2: NTD Preventive Chemotherapy Coverage in Nigeria versus WHO targets. Source: Compiled from [3,6,7,12].

4. Funding Landscape and the 2025 Crisis

4.1. The USA ID Withdrawal and Its Consequences

For nearly two decades, USAID served as a pillar of NTD programs in Nigeria and other endemic countries, supporting the delivery of about 3.3 billion treatments to over 1.7 billion people across 26 countries, with a cumulative investment of US$1.4 billion [1]. The sudden withdrawal of this funding in 2025 has had immediate repercussions. WHO reported in April 2025 that health service disruptions had been reported by over 70% of surveyed country offices, with NTD programs among the most severely affected, in some settings comparable in scale to the peak of the COVID-19 pandemic [1]. Early reports to WHO indicate that 47 mass-treatment campaigns warranted to free 143 million people from the burden of NTDs have been delayed globally. Over 55 million NTD treatment tablets in Africa risk expiry by the end of 2025 if alternative delivery mechanisms are not secured [1]. Implementing partners such as Research Triangle International have exited Nigeria following the cuts [6]. Missing the 2025 campaigns and impact surveys will postpone elimination targets in at least 10 additional countries, according to WHO [1].

4.2. Broader ODA Decline

The USAID exit is positioned within a broader, structural decline in official development assistance (ODA). The OECD projected a 9–17% drop in ODA in 2025, compounding a 9% decline already recorded in 2024 [32]. For the first time in nearly 30 years, France, Germany, the United Kingdom and the United States all cut their ODA in 2024, and 2025 marks the first time all four have reduced ODA for two consecutive years. Sub-Saharan African countries are projected to face a 16–28% decline in net bilateral ODA in 2025 [32]. The combination of declining multilateral health funding creates a structural financing crisis for NTD programs.

4.3. Nigeria's Domestic Financing Response

In a significant policy shift, Nigeria has started mobilizing domestic resources to offset the donor funding gap. This landmark achievement was recorded in late 2025 when 21 out of 36 states established dedicated NTD budget lines within their 2025 Medium Term Expenditure Framework (MTEF), following an intensive advocacy championed by the Federal Ministry of Health and Social Welfare which supported by Uniting to Combat NTDs [33]. The Nigerian federal government launched its NTD Master Plan (2023–2027), aligned with the WHO 10-year roadmap, estimating that ₦8.6 billion is needed for effective national NTD elimination programming [6]. Economically, the investment rationale is compelling in that Nigeria alone stands to gain $19 billion in economic productivity by 2030 for meeting NTD elimination targets [34]. The Minister of State for Health has described NTDs as being 'mostly prevalent in children and women and largely associated with poverty, poor sanitation, unsafe water supply and substandard housing conditions', framing NTD elimination as a core bedrock of Nigeria's Universal Health Coverage (UHC) agenda [7].

Funding Source	Historical Contribution	2025 Status	Impact of Changes
USAID (USA)	3.3 billion treatments, $1.4 billion over 20 years to 26 countries	**WITHDRAWN (2025)**	47 MDA campaigns delayed, 143 million people unprotected, 55M+ tablets risk expiry
Gates Foundation	Funded ivermectin stopping assessment in LF/Oncho (extended 2024–2025)	**Partial: project concluded Sept 2025**	Positive: accelerated LGA-level elimination assessments
Global Fund	Coordination support & domestic financing strengthening	**Active**	Supporting subnational NTD budget alignment
UK / ODA (DFID/ FCDO)	Historically major contributor to NTD programming	**CUT: Ascend programme ended 2021, further ODA cuts 2024–2025**	Reduced MDA coverage and supply chains
Nigerian Federal Government	NTD Master Plan 2023–2027 launched, ₦8.6bn required	**Growing domestic commitment**	21/36 states have dedicated NTD budget lines in 2025 MTEF

Table 3. NTD Funding Landscape in Nigeria: Key Contributors, Status, and Impact of Changes (2025). Source: Compiled from [1,6,13,32,33].

5. Current Challenges and Emerging Threats

5.1. Regulatory and Supply Chain Bottlenecks

New government policies and restrictions on the importation of donated NTD medicines represent an unanticipated systemic barrier. In 2024, Nigeria experienced a serious delay in leprosy multi-drug therapy (MDT) ascribed to NAFDAC regulatory and bureaucratic hinderances which disrupted treatment of active cases. Similar risks exist for 2025 drug consignments which as at early 2026, had not been received [6]. Streamlining pre-approval processes for donated WHO-certified NTD medicines is urgent.

5.2. Insecurity and Access Constraints

Active conflict and insecurity in northeastern Nigeria (Borno, Adamawa, Yobe States) and parts of the Northwest have severely limited access for NTD surveillance teams, community distributors and MDA campaigns. These are specifically the areas with the highest NTD burden in Nigeria. Conflict-sensitive programming such as mobile health units, community health worker-led distribution and surge campaign strategies during periods of relative stability are necessary adaptations [6].

5.3. Climate Change and Vector Range Expansion

Climate change is reshaping the epidemiology of vector-borne and water-related NTDs in Nigeria. Rising temperatures and unpredictable rainfall patterns are expanding habitats for Culex mosquitoes (LF), Simulium blackflies (onchocerciasis) and freshwater snails (schistosomiasis), creating more transmission zones beyond historically endemic areas. The Niger Delta region which already is schistosomiasis-endemic, may face worsening exposure through seasonal flooding cycles [17]. Climate-responsive NTD surveillance and adaptive geographic mapping are necessary but currently, underfunded components of the national response are an obstacle.

5.4. Inadequate Primary Healthcare Integration

Nigeria's NTD program has historically operated as a vertical, campaign-based effort rather than an integrated primary healthcare service. This model is efficient for MDA delivery but fails to insert morbidity management, surveillance, diagnosis and treatment into routine health systems. Experts regularly argue that without this integration, NTD programs remain donor-dependent, fragile and unable to sustain gains after external funding exits [6,15]. The Federal Government's NTD Master Plan totally prioritizes PHC integration as a strategic objective.

5.5. Co-Endemicity and Polyparasitism

A critical and underappreciated dimension of Nigeria's NTD burden is co-endemicity i.e the simultaneous presence of multiple NTDs within the same communities and even within the same individuals. Polyparasitism amplifies clinical severity, complicates treatment regimens (particularly in loa loa co-endemic areas where standard ivermectin dosing carries adverse event risk) and demands integrated diagnostic and treatment approaches. Co-endemic areas require adapted, multi-disease MDA strategies rather than single-disease campaigns.

Challenge Domain	Specific Issue	Recommended Action
Funding	USAID withdrawal, declining ODA, ₦8.6bn gap in national master plan	Increase domestic budget lines, leverage IDA21 World Bank cycle, innovate NTD financing bonds
Medicine Supply	Regulatory bottlenecks delaying importation of donated NTD medicines, 55M tablets at risk of expiry in Africa	Streamline NAFDAC import processes, pre-position essential medicines, warehouse regionalisation
Coverage Gaps	Schistosomiasis and STH coverage below WHO 75% target, remote and conflict areas unreached	Integrate MDA into routine PHC, expand community-directed treatment with ivermectin (CDTI)
Security/Access	Insecurity in NE Nigeria and parts of NW restricts field operations and surveillance	Conflict-sensitive programming, mobile health units, community health workers in conflict zones
Health Workforce	High attrition of health workers in endemic states, inadequate NTD-trained personnel	Task shifting to community health extension workers, NTD training modules in health curricula
Re-emerging Diseases	Yaws resurging after 1945 elimination, leprosy persists in NW	Enhanced surveillance, active case detection, integrated NTD morbidity management
Climate Change	Expanding vector habitats, seasonal flooding increasing schistosomiasis transmission zones	Climate-responsive NTD mapping, adaptive surveillance, WASH reinforcement

Table 4: Summary of Key Challenges and Recommended Actions for NTD Elimination in Nigeria. Compiled from: [1,6,12,32,33,35,36].

6. Recommendations

6.1. Domestic Financing and Political Will

- All 36 states including the FCT should establish and fund dedicated NTD budget lines in the 2026 MTEF and beyond, building on the precedent set by the 21-states in 2025 [33].
- The Federal Government should release the full ₦8.6 billion estimated in the NTD Master Plan (2023-2027) as a minimum baseline commitment for the eradication of NTDs [6].
- Nigeria should develop an NTD Investment Case for presentation at the IDA21 World Bank cycle (2025-2028) to access multilateral financing [35].

6.2. Medicine Supply and Regulatory Reform

- NAFDAC should establish an expedited approval pathway for WHO-prequalified donated NTD medicines, including pre-shipment approval protocols.
- Regional medicine warehousing should be established across Nigeria's six geopolitical zones to reduce importation dependency and tablet expiry risk.

6.3. Program Integration, Surveillance and Research Priorities

- NTD services including MDA delivery, morbidity management, passive case detection and surveillance must be integrated into routine PHC services at the ward and facility level.
- Community health extension workers (CHEWs) and community-directed distributors should receive formalize NTD training modules as part of their core competency framework.
- Establish a real-time, LGA-level NTD surveillance dashboard feeding into the national DHIS2 system to improve program monitoring and accountability.
- Invest in molecular epidemiology studies to map co-endemicity patterns and characterize loa loa risk zones to guide safe ivermectin delivery.
- Prioritize climate-responsive NTD mapping to identify newly at-risk zones for schistosomiasis and lymphatic filariasis due to vector habitat expansion.

6.4. Partnerships and Advocacy

- Nigeria should champion NTD elimination as a continental priority within AU and ECOWAS health frameworks, advocating for pooled African domestic financing mechanisms [36].
- Partnerships with pharmaceutical companies donating NTD medicines (Merck, GSK, Pfizer, Eisai) should be deepened through long-term bilateral agreements that reduce vulnerability to ODA fluctuations [1].

7. Conclusion

Nigeria stands at a critical inflection point in its campaign against neglected tropical parasitic diseases. Remarkable progress has been achieved in the Guinea worm eradication, onchocerciasis elimination in two states, significant reductions in trachoma and the first steps toward domestic financing ownership in 21 states. Yet the 2025 USAID funding withdrawal, yaws re-emergence, persistent coverage gaps in schistosomiasis, soil transmitted helminths and climate-driven vector expansion constitutes an existential threat to these gains.

The 2030 WHO elimination targets remain achievable, but only through decisive actions like universal domestic budget line establishment, regulatory reform to ease medicine importation, full integration of NTD services into primary healthcare and a national commitment to transition from donor dependency to sustainable, government-owned programming. Nigeria's economic case for NTD investment is strong with a $19 billion in productivity gains awaiting elimination success [34]. The question is no longer whether Nigeria can afford to eliminate NTDs, but whether it can afford not to?

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