

Integrating Malaria Prevention Strategies into Primary Healthcare in Nigeria: A Narrative Review of Evidence, Implementation Pathways and Policy Priorities

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ABSTRACT

Malaria remains a public-health challenge in Nigeria despite the availability of effective prevention methods. This review highlights the importance of integrating malaria prevention into primary healthcare, which serves as the closest point of care for households and supports maternal, newborn, and child-health services. Integration should involve coordinated service delivery, financing, data management, and accountability rather than simply adding more duties to overstretched facilities. Key strategies include routine distribution and education on insecticide-treated nets, preventive treatment for pregnant women, chemoprevention for eligible children, vaccination where appropriate, environmental and vector control, community case management, referral, and improved surveillance. Although combined facility- and community-based approaches have increased service use, progress is limited by shortages of staff, medicines, funding, data, private-sector reporting, and equitable access. The review recommends a nationally defined service package, local planning, stronger supervision, protected commodity funding, expanded community health workers, improved data systems, and equity-focused monitoring tailored to transmission patterns.

Keywords: malaria prevention; primary healthcare; Nigeria; insecticide-treated nets; chemoprevention

INTRODUCTION

Malaria prevention in Nigeria sits at the intersection of a very large disease burden and a health system in which the first formal point of care for most communities should be PHC [1]. The latest WHO country profile estimates 68.5 million malaria cases and 184,900 deaths in 2024, while 97% of the population lived in areas classified as having high transmission. The same profile records a large gap between estimated burden and routine reporting: 24.0 million presumed or confirmed cases and 3,600 reported deaths [2]. These figures are not directly interchangeable, because WHO estimates are modelled and routine figures depend on service contact and reporting, but the discrepancy exposes weaknesses in access, detection and surveillance [3]. The case for integration is therefore practical as well as conceptual. Malaria risk is shaped by pregnancy, age, season, geography, housing, poverty, climate and access to preventive commodities. These determinants are encountered repeatedly through antenatal care (ANC), immunisation, nutrition services, outpatient consultations, community outreach and household visits [4]. Every such contact can prevent malaria, identify missed protection and generate better local intelligence. Conversely, a vertical malaria programme that is poorly connected to routine PHC may achieve high campaign coverage temporarily while leaving gaps between campaigns, duplicating supervision and weakening continuity [5]. This review synthesises policy documents, national survey evidence and Nigerian implementation studies. It is a narrative rather than systematic review: sources were selected for relevance to the burden, intervention mix, PHC delivery and implementation constraints. The aim is to clarify what meaningful integration entails, assess its potential and limitations, and propose an operational agenda.

Why Primary Healthcare Is the Strategic Platform

PHC combines first-contact clinical care with prevention, health promotion, outreach and community participation. In malaria control, this gives PHC three linked functions. First, it is a delivery platform for commodities and preventive medicines. Second, it can convert routine encounters into behaviour-change

opportunities, including correct and consistent net use, early ANC attendance and completion of chemoprevention schedules [6]. Third, it is the foundation for surveillance: fever testing, stock records, treatment outcomes, referrals and community reports reveal where transmission and service failures are concentrated. Integration also supports universal health coverage. Malaria prevention is not fully accessible when nominally free interventions still require transport, repeated visits, informal payments or purchase from private outlets [7]. Bringing prevention closer to households, aligning it with services already used by women and children, and financing it through essential PHC packages can reduce these transaction costs. Nigeria's current PHC-strengthening agenda therefore offers a window to make malaria services part of routine quality improvement rather than a parallel project [8].

Priority Strategies and Their PHC Entry Points

Primary health care (PHC) should serve as the main platform for sustaining malaria prevention, diagnosis, and referral beyond periodic campaigns. While mass distribution of insecticide-treated nets (ITNs) rapidly increases ownership, routine antenatal care, immunisation, and child-welfare clinics should provide nets, replacement advice, and demonstrations on proper use and care. Community health workers (CHWs) can identify households with pregnant women, young children, damaged nets, or inadequate coverage, shifting attention from numbers distributed to effective protection [9]. Vector control should also respond to widespread pyrethroid resistance through resistance-informed procurement, local reporting, environmental-health coordination, and carefully targeted larval source management. Antenatal care should integrate intermittent preventive treatment in pregnancy, ITN delivery, anaemia screening, fever assessment, counselling, directly observed treatment, documentation, and follow-up, supported by reliable medicine supplies and early community mobilisation. For children, seasonal malaria chemoprevention requires accurate household enumeration, repeated monthly delivery, adherence, supervision, clear communication, and adverse-event management, with links to nutrition screening, immunisation tracing, and referral [10]. Perennial chemoprevention and malaria vaccines should follow national policy, use existing immunisation contacts, and complement rather than replace nets, medicines, and prompt diagnosis. Trained and supervised CHWs can provide prevention counselling, support medicine distribution, identify pregnancy, test and treat uncomplicated fever where authorised, recognise danger signs, and refer severe cases [11]. Overall, malaria control should use layered, geographically targeted interventions, unified referral systems, integrated reporting, and routine supervision from linked PHC facilities. Ward-level microplans and subnational risk stratification should guide delivery, strengthen community trust, improve data capture, and ensure scarce resources reach populations at greatest risk [12].

Table 1: What Integration Requires at System Level

System function	Integrated PHC practice	Core indicator
Service package	Standard malaria actions embedded in ANC, immunisation, child health, outpatient care and outreach	Eligible contacts receiving the complete preventive bundle
Workforce	Competency-based training, job aids, task sharing and integrated supportive supervision	Protocol adherence and referral completion
Commodities	Unified forecasting, minimum stock levels and last-mile redistribution	Stock-out days for ITNs, RDTs, SP and SMC medicines
Information	One patient/community record linked to routine reporting and review	Completeness, timeliness and concordance of malaria data
Financing	Malaria prevention included in costed PHC benefits and facility plans	Domestic expenditure and out-of-pocket cost per user
Governance	Federal standards with state/LGA adaptation and ward accountability	Coverage gaps by ward, sex, poverty and rurality

Integration succeeds when these functions move together. Training without commodities creates frustration; commodities without data conceal inequity; data without local authority do not produce corrective action. Facility and LGA review meetings should therefore examine a small set of linked indicators and trigger redistribution, outreach or supervision [13]. Nigeria's experience with bundled interventions in Niger State found increased utilisation in intervention facilities, suggesting that combined inputs can change service use, although generalisability and attribution remain limited [14]. Likewise, the Malaria Frontline Project in Kano and Zamfara demonstrated the value of facility assessment, local data and adaptive improvement while revealing gaps in readiness and coverage [15].

Barriers and Risks

Integrating malaria services into Nigeria's primary health care system faces significant workforce, financing, governance, data, geographic and biological risks. PHC workers already handle many programmes, so adding malaria responsibilities without more staff, redesigned workflows and effective supervision may create superficial integration while reducing service quality [16]. Sustainable implementation requires competency-based training, mentoring, decision-support tools, protected outreach time, and clear roles, pay and referral authority for community health workers. Commodity shortages also threaten prevention and treatment by disrupting supplies and weakening public trust. Stronger systems should include ward-level demand forecasting, transparent stock monitoring, redistribution procedures and contingency reserves before transmission peaks [17]. Financing remains a major concern because malaria diagnosis and artemisinin-based combination therapy are not universally free under national public-sector policy, meaning household costs may delay care and break the link between prevention and treatment. Nigeria's dependence on external funding further highlights the need for stronger domestic ownership. Governance is fragmented across government levels, partners, facilities and private providers, while parallel reporting systems increase workload and limit useful local data [18]. Reporting from pharmacies, medicine vendors and private clinics should therefore be simplified, supported and regulated. Finally, malaria transmission varies widely by location and is influenced by climate, insecurity, displacement, urbanisation and insecticide resistance. National integration should define essential functions, while allowing LGAs to adapt interventions and intensity to local conditions and priorities [19].

Policy and Implementation Recommendations

A strong national primary health care (PHC) malaria prevention strategy should define, cost, and standardize a package of services delivered through antenatal care, immunisation, under-five care, outpatient fever management, outreach, and household visits, with clear eligibility, commodity, referral, and documentation requirements. Planning should be tailored to local government areas and wards using epidemiological risk, seasonality, resistance patterns, service access, and population vulnerability to select layered interventions and establish micro-targets [20]. Malaria activities should be integrated into a single ward microplan and supportive-supervision system that also reviews maternal, newborn, child health, nutrition, and immunisation performance. Commodity security requires minimum stock levels, reliable stock visibility, pre-season positioning, routine reconciliation, and rapid redistribution between facilities. Community health workers should be linked to facilities, consistently supplied, supervised, fairly remunerated, and assessed by completed referrals and outcomes rather than activity counts alone [21]. Surveillance systems should harmonise registers, include community and private-sector data, triangulate commodity and case information, and support monthly local action reviews. Quality and equity monitoring should focus on effective coverage whether services are received correctly, completely, and on time—and disaggregate results by location, wealth, sex, age, disability, and displacement. Sustainable domestic financing should embed malaria prevention in essential PHC benefits and state and local budgets, while partner funding strengthens shared systems [22]. Communities should co-design messages, address misconceptions, and participate in accountability. Finally, pragmatic implementation research should compare delivery models, costs, acceptability, and equity, with rapid feedback into planning. This approach will improve coordination, resilience, accountability, and access while reducing preventable malaria illness and deaths nationwide [23].

CONCLUSION

Integrating malaria prevention into primary health care is more than an administrative adjustment; it is a strategy for turning every contact with the health system into an opportunity for sustained protection. Nigeria already possesses essential malaria-control tools, including insecticide-treated nets, preventive medicines, community-based delivery systems, rapid diagnostics, vector-control measures, and emerging vaccines. However, these interventions can achieve their impact only when they are supported by dependable health structures. An effective model should combine a nationally defined minimum package with local government area stratification, strong links between facilities and communities, secure commodity supplies, integrated supervision, sustainable financing, and timely data that guide local decisions. If integration is poorly funded, it may overwhelm primary health care workers and weaken accountability. When carefully designed and adequately resourced, however, it can reduce missed opportunities, close equity gaps, strengthen service delivery, and make malaria prevention a dependable, routine public service rather than an occasional campaign.

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