



Federal Ministry of Health

**National Integrated
Pneumonia Control Strategy
& Implementation Plan**

August 2019



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FOREWARD

Children under the age of 5 years account for 19% of Nigeria's population. This vital segment is vulnerable to a range of biological, physiological and psychosocial influences within the wider environment. Statistics have shown that children are at higher risk of contracting pneumonia, malaria, diarrhoea and other infections.

More than 75% of deaths in children are due to preventable and treatable conditions and include newborn deaths (29%), deaths due to malaria (20%), pneumonia (17%), and diarrhoea (19%), with malnutrition underlying 53% of these deaths. Majority of these deaths occur at home, among the poor, rural and peri-urban populations where mothers and caregivers have limited access to quality life-saving interventions against major child-killer conditions.

The Federal Ministry of Health is committed to addressing pneumonia, one of the highest child-killer diseases and led the development of the first Nigerian Pneumonia Control Strategy and Implementation Plan in 2019. The strategy was developed in collaboration with partners and stakeholders with widespread consultations at national and sub-national levels. There was engagement with professional and regulatory bodies, civil society organisations, development partners and the private sector.

The Nigerian Pneumonia Control Strategy and Implementation Plan promotes an integrated approach to pneumonia control through multi-sectoral actions. It aligns and builds on existing policies and strategies, namely, the revised National Health Policy, the National Child Health Policy, the Integrated Reproductive Maternal, Newborn, Child and Adolescent Health plus Nutrition (RMNCAH+N) Strategy, the Integrated Management of Childhood Illness (IMCI) Strategy, the National Strategic Plan of Action for Nutrition, and the Integrated Community Case Management (iCCM) of childhood illness among others.

Pneumonia control is central to achieving Universal Health Coverage and meeting Sustainable Development Goals (SDGs) in Nigeria. It is imperative to effectively implement the packages of evidence-based interventions articulated within this strategy and plan for protecting and preventing diseases in children with a focus on underserved and vulnerable communities.

I call on all relevant Federal Ministries, Department and Agencies, State Governments, State Ministries of Health and their Agencies, partners, civil society groups, donors, the private sector and other stakeholders to support the Federal Ministry of Health in the implementation of this strategy and plan for accelerating actions against pneumonia in children. This will save children's lives and impact on the trajectory of child health outcomes in Nigeria.



Dr. E. Osagie Ehanire MD, FWACS
Honourable Minister of Health

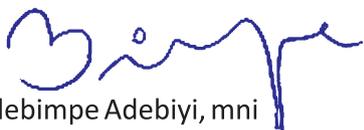
Acknowledgment

The National Pneumonia Control Strategy and Implementation Plan was developed through multi-stakeholder efforts and the Federal Ministry of Health is grateful to the Every Breath Counts Coalition most especially UNICEF, USAID and Save the Children International for providing both financial and technical support throughout the process.

Our profound appreciation also goes to the Professional and Regulatory bodies such as Paediatric Association of Nigeria (PAN), Nigeria Society of Neonatal Medicine (NISONM) and the Society of Family Physicians of Nigeria (SOPFON) for working tirelessly behind the scene towards ensuring a pragmatic document that will make the lives of Nigerian children better.

The Ministry commends Dalberg Advisor, the Consultant, for facilitating the development process and particularly for serving as a good link between the Nigerian Government and the Every Breath Counts Coalition.

To all other Stakeholders too numerous to mention, we are most grateful for your careful review and comments that helped to improve the document for effective implementation.



Dr. Adebimpe Adebisi, mni
Director, Family Health Department

Acronyms

Amox DT	Amoxicillin Dispersible Tablets
ANRiN	Accelerating Nutrition services in Nigeria
ARIs	Acute respiratory infections
BHCPF	Basic Health Care Provision Fund
BMGF	Bill and Melinda Gates Foundation
BMPHS	Basic Minimum Package of Health Services
CHAI	Clinton Health Access Initiative
CHEW	Community Health Extension Worker
CHIPS	Community Health, Influencers, Promoters, and Services
CHTWG	Child Health Technical Working Group
CHW	Community Health Workers
CIFF	Children’s Investment Fund Foundation
CMAM	Community Management of Acute Malnutrition
CMS	Central Medicine Stores
CORPs	Community Oriented Resource Persons
CRVS	Nigerian Civil Registration and Vital Statistics
DfID	Department for International Development
DHIS2	District Health Information System version 2
DLIs	Disbursement-Linked Indicators
DRF	Drug Revolving Fund
DTaP	Diphtheria, Tetanus and Pertussis
EBCC	Every Breath Counts Coalition
ERGP	Economic Recovery and Growth Plan
EEL	National Essential Equipment List
EML	Essential Medicines List
ENCC	Essential newborn care course
FCT	Federal Capital Territory
FGN	Federal Government of Nigeria
FMoH	Federal Ministry of Health
GAC	Global Affairs Canada
GAVI	Global Alliance for Vaccines and Immunization
GAPPD	Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea
GDP	Gross Domestic Product
GFF	Global Financing Facility
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HSS	Health System Strengthening
IEC	Information, Education and Communication
iCCM	Integrated Community Case Management
IDA	International Development Association
IMCI	Integrated Management of Childhood Illness
KPIs	Key Performance Indicators
LERICC	Local Emergency Routine Immunization Coordination Centre
LGA	Local Government Areas
MAM	Moderate Acute Malnutrition
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MNCH	Maternal, Newborn, and Child Health

MNCHW	Maternal, Newborn, and Child Health Week
MoU	Memorandum of Understanding
MPDSR	Maternal and Perinatal Death Surveillance and Response
NAPPMED	Nigerian Association of Patent and Proprietary Medicine Dealers
NAFDAC	National Agency for Food and Drug Administration and Control
NBS	National Bureau of Statistics
NCDC	Nigeria Centre for Disease Control
NHIS	National Health Insurance Scheme
NERICC	National Emergency Routine Immunization Coordination Centre
NICS	National Immunization Cluster Survey
NMR	Neonatal Mortality Rate
NNHS	National Nutrition and Health Survey
NPHCDA	National Primary Health Care Development Agency
NSHDP	National Strategic Health Development Plan II
NSHIP	Nigerian State Health Investment Project
NSTG	Nigeria Standard Treatment Guidelines
ORIS	Optimised Routine Immunization Sections
PAN	Paediatric Association of Nigeria
PCV	Pneumococcal Conjugate Vaccine
PHC	Primary Health Care
PHCUOR	Primary Health Care Under One Roof
PPMVs	Patent and Proprietary Medicine Vendors
RAcE	Rapid Access Expansion Program
REW	Reach Every Ward
RRT	Respiratory Rate Timers
SAM	Severe Acute Malnutrition
SBC	Social behaviour change
SDGs	Sustainable Development Goals
SERICC	State Emergency Routine Immunization Coordination Centre
SOML PforR	Saving One Million Lives Program-for-Results
SON	Standards Organization of Nigeria
SOPs	Standard Operating Procedures
SMART	Standardized Monitoring and Assessment of Relief and Transitions
SMOE	State Ministry of Education
SMOH	State Ministry of Health
SMS	Short Message Service
SPHCDA	State Primary Health Care Development Agency
SpO2	Peripheral capillary oxygen saturation
U5	Under-5
UN	United Nations
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
WHO	World Health Organization

Executive summary

Improving newborn and child health is critical for saving lives and advancing Nigeria’s health outcomes. Today, over 700,000 newborns and children die in Nigeria each year, which represents over 10% of the global burden. Reducing under-five mortality—in line with Sustainable Development Goal (SDG) 3.2—is therefore core to realizing Nigeria’s full economic and social potential.

Nigeria cannot achieve its newborn and child health goals without better control of its number one infectious under-five killer: pneumonia. Pneumonia causes about 100,000 deaths in Nigeria each year. Many occur in the first year of life, with high concentration in Northern Nigeria. To achieve targets set by the Integrated Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea (GAPPD), Nigeria must lower child pneumonia deaths to approximately 26,000 per year by 2030. Yet at current rates of progress, Nigeria will not achieve this goal until 2075 or beyond. What’s more, reduction in pneumonia disease burden has lagged behind other child health priorities. Recognizing this, the Federal Ministry of Health (FMOH), the National Primary Healthcare Development Agency (NPHCDA), other parastatals, subnational governments, and partners have prioritized strengthening pneumonia control via integrated policy and programmatic efforts.

To date, progress to address pneumonia—known as the “forgotten killer—has been insufficient. Pneumonia control is complex. It requires strong integration across a range of partners and sectors to deliver 10+ interventions that protect against, prevent, diagnose, and treat pneumonia. Yet today, pneumonia suffers from low visibility, prioritization, and funding within this complex landscape. As one example, Integrated Community Case Management (iCCM) has been delivered in several Nigerian states without pneumonia commodities. Thus, a range of barriers—from limited prevention, to low care-seeking behaviour to gaps in health worker skills—continue to impede the coverage and quality of proven interventions.

Against this backdrop, the Federal Government of Nigeria (FGN)—led by the FMOH—has developed the first-ever national pneumonia control strategy and implementation plan to elevate pneumonia within the integrated newborn and child health agenda. Specifically, the strategy provides concrete priorities and recommendations—as well as coordination and accountability mechanisms—to strengthen pneumonia control in a manner that is integrated into existing policies and strategies (e.g., Primary Healthcare Under One Roof, National Child Health Policy) and health service delivery platforms (e.g., iCCM, IMCI). It is important to emphasize that this strategy does not recommend pneumonia-focused programming or siloed approaches. Rather, it calls for the mobilization of a strong coalition of partners to put pneumonia on the map and ensure funding and progress are commensurate with its disease burden.

The vision of the strategy is to reduce newborn and child morbidity and mortality caused by pneumonia, aligned with and supportive of the integrated health goals of the FGN. Within SDG 3.2 to end under-five preventable deaths, the GAPPD target is to reduce newborn and child pneumonia deaths to less than 3 per 1,000 live births by 2030.

To achieve this vision, six strategic priorities aim to strengthen the quality and reach of proven interventions within integrated programming. This strategy places an emphasis on interventions that show the most potential to reduce morbidity and mortality, including: immunization (including PCV, Hib vaccines), oral antibiotics, reduction of household air pollution, and improved nutrition. The first aim is to protect and prevent new cases of newborn and childhood pneumonia—and then to effectively diagnose and treat newborns and children who fall ill. To do so, the priorities focus on strengthening the enabling environment (policy and financing, data and information systems, coordination and partnerships), demand-side (community prevention and care-seeking), and supply-

side (service delivery, supply and distribution) aspects of pneumonia control. The table below summarizes the priorities, targets, and recommendations.

STRATEGIC PRIORITY & TARGET FOR 2025	PRIORITY RECOMMENDATIONS
<p>1. <u>Coordination and partnerships</u>: Strengthen coordination mechanisms to drive accountability and action around priorities within integrated programming</p> <p><u>Target</u>: By 2025, actors working on pneumonia control have jointly completed all agreed-upon activities within the pneumonia control accountability framework</p>	<ul style="list-style-type: none"> ● Appoint implementation coordinator within the federal Child Health Technical Working Group (CHTWG) to integrate and amplify pneumonia control activities ● Develop an accountability framework for the strategy and integrate into broader newborn and child health efforts ● Ensure states have relevant coordination mechanism with appointed implementation coordinators to help drive accountability at state and local levels ● Strengthen coordination across Ministries and sectors involved in pneumonia control at the national and subnational levels ● Strengthen linkages between national and state coordination mechanisms
<p>2. <u>Policy and financing</u>: Drive political commitment and action, especially at the subnational level, and mobilize sustainable financing across sectors</p> <p><u>Target</u>: By 2025, 10 states with highest pneumonia burden have domesticated¹ this strategy and have dedicated budget lines for integrated health activities (i.e., routine immunization, iCCM, and IMCI) that support pneumonia control (baseline: N/A)</p>	<ul style="list-style-type: none"> ● Secure champions and broader support for pneumonia control across sectors ● Ensure domestication, dissemination, and implementation of this strategy and other pneumonia-related policies at the subnational level ● Mobilize sustainable financial resources across multiple sectors to support pneumonia control efforts
<p>3. <u>Data and information systems</u>: Include pneumonia-relevant metrics in health information systems to enable collection and use of high-quality data on disease burden and interventions</p> <p><u>Target</u>: By 2025, 10 states with highest pneumonia burden use pneumonia-relevant data collected by registers and HMIS/DHS2 to inform programmatic and budgeting decisions (baseline: N/A)</p>	<ul style="list-style-type: none"> ● Advocate for the inclusion of pneumonia-relevant indicators in routine data collection via HMIS and DHIS2 ● Strengthen aspects of data collection, analysis, and use most critical for pneumonia-relevant indicators at subnational levels
<p>4. <u>Community prevention and care-seeking</u>: Improve caregiver awareness and change behaviour to better prevent, recognize, and seek care for pneumonia</p> <p><u>Target</u>: By 2025,</p> <ul style="list-style-type: none"> ● 45% of households cook with clean sources (baseline: 2.7%, NDHS 2013) ● 49% of mothers exclusively breastfeed (baseline: 24%, MICS 2016/2017) ● 64% of mothers recognize fast breathing or difficult breathing as danger signs (baseline: 39%, MICS 2016/2017) ● 73% of mothers seek care when children show ARI symptoms (baseline: 35%, NDHS 2013)² 	<ul style="list-style-type: none"> ● Improve awareness across caregivers, household influencers, and the community on how to protect, prevent, recognize, and understand the potential severity of pneumonia ● Use community structures to reinforce pneumonia messaging, increase acceptance of interventions, and drive behaviour change via engagement and follow up with mothers and caregivers ● Empower communities to own pneumonia control and ensure accountability

¹Meaning adoption and/or adaptation

² Does not include those seeking care at PPMVs

<p>5. Service delivery: Increase the quality and coverage of pneumonia control interventions within integrated service delivery across public and private points of care</p> <p>90% of patients seeking care are correctly diagnosed and treated and/or referred at each point of care (baseline: 36% received antibiotics and care, NDHS 2013)</p>	<ul style="list-style-type: none"> ● Reinforce efforts to scale routine immunization, iCCM, and IMCI across states and LGAs, especially those with high pneumonia burden ● Strengthen pneumonia control interventions within community-based care, including iCCM ● Strengthen pneumonia control interventions within facility-based care, including iCCM ● Strengthen training and engagement with PPMVs
<p>6. Supply and distribution: Scale up products required for pneumonia control—including vaccines, Amox DT, medical oxygen and pulse oximetry, and clean cooking fuels—via relevant supply chains</p> <p><u>Target:</u> By 2025, states reach 72% coverage of PCV and Pentavalent, 50% stock availability of Amox DT across, community health workers, PHCs, and PPMVs, and safe delivery of oxygen to 100% of hypoxemia patients (baselines: 33%, WHO 2016; unknown; unknown)</p>	<ul style="list-style-type: none"> ● Support local manufacturing of Amox DT and increase availability across public and private points of care ● Strengthen the distribution of vaccines to last-mile communities ● Strengthen the supply of pulse oximetry, oxygen, and related products at facilities ● Strengthen the supply of clean cooking fuels at the community level

The strategy focuses and directs resources to high-burden populations and recommends tailoring of activities at the state and local levels, based on drivers and burden of pneumonia. Specifically, each strategic priority contains a combination of (i) national, (ii) state-level, and (iii) high-burden state priority activities. In addition, the CHTWG and designated implementation coordinator will be responsible for focusing and directing resources to states with the highest pneumonia burden. This approach simultaneously ensures that states can adapt the strategy based on the unique drivers of pneumonia burden and barriers to control they face and that no one state falls behind. Several guiding principles—integration, quality, focus and prioritization of efforts, equity, and learning—will help drive impact across all geographies and priorities.

In years 1 and 2, the top priorities for the strategy focus on increasing support for pneumonia control and translating this support into concrete actions at the subnational level. These include:

- Developing an accountability framework for the strategy and hiring an implementation coordinator to support the FMoH in driving action across priorities.
- Advocating for, domesticating, and tailoring the strategy at subnational levels. This should involve states examining their current pneumonia control landscape, and based on identified gaps and barriers, prioritizing recommendations to start implementing first—ensuring strong focus on (i) scaling routine immunization, (ii) strengthening community- and facility-based integrated case management (i.e., iCCM, IMCI), (iii) training PPMVs, (iv) increasing availability of Amox DT, and (v) increasing caregiver prevention and care seeking.
- Adding priority pneumonia-relevant indicators to the HMIS and routine vital sign registers.

The five-year action plan contains detailed guidance on how to move these priorities forward via activities at the national, state, and local levels—with designated stakeholder(s) responsible for each.

Executing on these priorities will require resources at the national and subnational levels. Given this strategy builds on existing efforts, most resources required are linked to ongoing integrated programming (e.g., routine immunization, iCCM, and IMCI). Understanding these resource needs requires detailed, bottom-up costing at the national, state, and local levels. However, to support initial resource planning efforts, the strategy provides directional estimates of resources required to implement catalytic activities—in addition to the costs of ongoing programming and service delivery.

Over five years, these national needs are estimated at approximately USD 1 million, and subnational needs are estimated at an average of USD 1 million per state, depending on population size. When starting to domesticate and/or implement the strategy, the FGN and its partners should use these directional estimates as a starting point to mobilize sufficient resources and further refine and incorporate into budgets.

Overall, this strategy will contribute to Nigeria’s integrated newborn and child health goals. While it is nearly impossible to isolate the contributions of this strategy vs. other efforts, the potential impact of pneumonia control is incontrovertible. Scaling up the coverage and quality of proven, cost-effective interventions could save thousands of lives per year—with profound social, economic, and political impact across Nigeria. Now is the time to do so, together.

The rest of this document is structured as follows:

- Section 1 provides context on pneumonia control in Nigeria and summarizes the rationale for this strategy;
- Section 2 summarises the vision, strategic priorities, guiding principles, and roles and responsibilities for the strategy;
- Section 3 outlines the integrated recommendations and activities that support each strategic priority;
- Section 4 summarises the five-year implementation plan, resource requirements; and
- Section 5 outlines the high-level monitoring, evaluation, and accountability plan for the strategy.

1. Introduction and context

1.1 Background

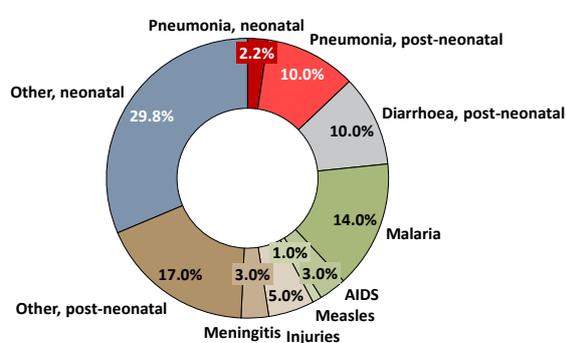
Improving child health and reducing under-five child mortality are core to Nigeria’s development agenda. Nigeria has the largest economy in Africa with an annual gross domestic product (GDP) of \$400 billion—yet an under-five mortality rate of 128 per 1,000 live births and a neonatal mortality rate (NMR) of 37 per 1,000 live births.^{3,4,5} Nigeria also has the highest number of unimmunized children in the world, with 4.3 million unimmunized children.⁶ Today, over 700,000 of under-five child deaths occur annually across the country, with consequences for families, communities, economic productivity, and the long-term health and growth targets laid out by the National Strategic Health Development Plan (NSHDP II) and the Economic Recovery and Growth Plan (ERGP), amongst other strategies.^{7,8,9} With seven million live births every year,¹⁰ Nigeria will not achieve its full economic and social potential without improving newborn and child survival.

Box 1: Defining pneumonia

Childhood pneumonia is a form of acute respiratory infection that affects the lungs. Pneumonia is the single largest infectious cause of death in children worldwide, killing over 900,000 children under the age of five in 2015 (16% of all child deaths). Pneumonia is caused by a number of infectious agents, including viruses (e.g. respiratory syncytial virus, pneumocystis jiroveci in infants infected with HIV), bacteria (e.g. streptococcus pneumoniae, haemophilus influenzae type b) and fungi. Pneumonia in neonates can also be caused by aspiration. Children usually present with either cough, fever, chest pains or fast breathing. The chest and upper respiratory tract are examined, and diagnoses are made based on initial assessment and patient history.

Source: World Health Organisation, November 2016

Figure 1: Causes of child and neonatal mortality in Nigeria, by percentage of deaths



In Nigeria, pneumonia is a leading infectious killer of children under five, accounting for over 94,000 deaths per year, or 258 children every day.¹¹ Pneumonia accounts for about 12% of all under-five deaths in Nigeria annually. Within this cohort, mortality varies both by age and geography.¹² Pneumonia and other acute respiratory infections (ARIs) are more prevalent in Northern Nigeria—where incomes are lower and healthcare infrastructure is less developed. Key drivers of pneumonia include child wasting, household air pollution from solid fuels, short gestation for birth weight, and ambient particulate matter pollution.¹³

³ This is higher than the Sub-Saharan Africa average of 75 and the global average of 39.

⁴ NDHS, National Bureau of Statistics, National Population Commission, 2013

⁵ World Bank Nigeria Database, accessed 12 August 2019

⁶ NPHCDA, Nigeria Strategy for Immunisation and PHC System Strengthening (2018-2028), 2018

⁷ Economic Recovery and Growth Plan 2017-2020

⁸ NDHS, National Bureau of Statistics 2013; Nigeria Every Newborn Action Plan, Federal Ministry of Health, 2016; UNICEF Global Databases 2017

⁹ Federal Ministry of Health; under-five mortality rate of 128 per 1,000 live births

¹⁰ ibid

¹¹ Draft Child Health Policy, based on WHO and Maternal Child Epidemiology Estimation Group (MCEE), 2015

¹² Draft Child Health Policy. There is limited data on the percent of newborn morbidity and mortality related to pneumonia.

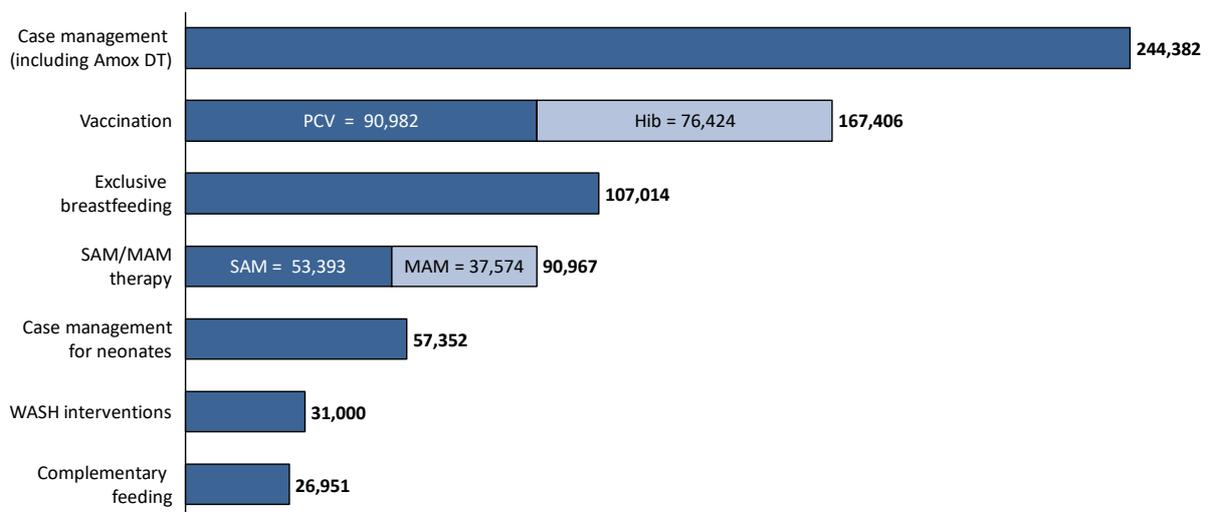
¹³ Every Breath Counts analysis.

Pneumonia control efforts are therefore critical to achieving child health goals, including those outlined within the United Nations Sustainable Development Goals. Nigeria must lower child pneumonia deaths to approximately 26,000 per year by 2030 to achieve GAPPD targets, and all newborn and child deaths to approximately 210,000 per year to achieve SDG 3.2.¹⁴ Yet at current rates of progress, Nigeria will not reach this goal until 2075 or later.¹⁵ This highlights the urgency and importance of strengthening pneumonia control, with an emphasis on protection and prevention, within an integrated child health approach.

1.2 Pneumonia control in Nigeria

Pneumonia control is complex because it involves 10+ interventions that span a continuum of care, from protection, to prevention, to diagnosis and treatment. Protection hinges upon interventions such as breastfeeding, nutrition, and clean cooking to improve household air quality—while prevention spans from day-to-day hygiene practices, to clean and safe delivery, to postnatal care, to immunization. Diagnosis and treatment involve caregiver awareness of the benefits of protection, prevention, and recognition of danger signs, access to health services, and coverage of essential medicines (e.g., Amox DT) at appropriate points of care. While all of these interventions are important, not all demonstrate the same potential to reduce morbidity and mortality. The figure below summarizes a non-comprehensive list of critical interventions to reduce pneumonia burden, based on potential mortality reductions. Specifically, this does not include reduction of air pollution, which is one of the main drivers of pneumonia cases in Nigeria.

Figure 2: Overview of potential impact of key interventions, if scaled to 80% by 2030¹⁶



Effectively controlling pneumonia across this continuum therefore requires contributions from many sectors, including health, agriculture, education, women’s empowerment, and environment. Moreover, a range of actors with varying objectives and agendas—including government, development partners, private sector, and civil society—must support pneumonia control within integrated, multi-sectoral efforts. This creates a complex landscape for coordination and action.

¹⁴ The goal of SDG 3.2 is to end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births, by 2030. GAPPD target is 3 under-five pneumonia deaths per 1,000 live births. Calculations based on projection that Nigeria will have approximately 8.5 million live births in 2030.

¹⁵ Save the Children, “Fighting for Breath,” 2015

¹⁶ Every Breath Counts analysis. Estimate considers current baseline coverage of interventions, as well as percentage of pneumonia cases the intervention targets. Reach is scaled up linearly from 2018 to 2030.

Over the last five years, the federal government, state governments, and partners have undertaken significant efforts to improve pneumonia control within integrated programming. Several national policies¹⁷ have explicitly addressed pneumonia care, seeking to improve treatment options by scaling access to Amox DT, oxygen, and pulse oximetry. Examples of state government efforts include the procurement of oxygen commodities via state tender committees; including Amox DT in the state Essential Medicines List (EML) and Drug Revolving Funds; and designing innovative awareness campaigns aimed at improving care seeking behaviour. Additionally, development partners such as USAID, CHAI, BMGF, UNICEF, DfID, Global Affairs Canada, and Save the Children have supported government efforts by funding or implementing integrated child health and pneumonia control programs in various states (e.g., iCCM, IMCI, introduction of vaccines—including PCV and Hib, the latter via Pentavalent—into routine immunization programs).

Yet a complex array of demand-side, supply-side, and cross-cutting barriers still impede appropriate protection, prevention, diagnosis, and treatment of pneumonia. These include:

- **Demand-side:** Caregiver prevention and demand for care remain low due to limited awareness and knowledge (e.g., of risk factors, disease severity), limited acceptance of some interventions (e.g., vaccines), limited civic engagement and social accountability to drive behaviour change, and low health literacy.
- **Supply-side:** Health care worker capacity, structural challenges around supervision and referral, and low coverage of key products and commodities (e.g., vaccines, Amox DT, oxygen, pulse oximeters, blenders) limit quality service delivery of pneumonia care.
- **Cross-cutting:** While many relevant policies exist at the national level, there is limited dissemination and implementation across states. Across programs and levels of government, pneumonia receives limited funding for awareness campaigns, procurement of drugs, and health worker training—within the under-resourced primary healthcare (PHC) system. This is due to budget execution challenges, oversight within integrated budgets, and lack of dedicated funding (unlike other leading killers, such as malaria). Lastly, coordination among partners, programs, sectors, and levels of government is difficult due to the decentralized health system and fragmented programming. There is limited accountability to drive progress at scale.

Moreover, these barriers vary considerably at the subnational level—and therefore necessitate targeted and tailored solutions.

These barriers stem from common root causes—most notably, lack of information, awareness, and funding—that limit support for pneumonia relative to its disease burden. From protection to prevention to treatment, there is limited reach of information on pneumonia, and where available, the information often lacks the required quality to drive action amongst its audience—whether a mother or a State Ministry of Health (SMoH). Families and caregivers are often unaware of risk factors (e.g., household air pollution) and how to mitigate them, how to recognize danger signs of pneumonia (only 39% of mothers can do so¹⁸), the severity of the disease, and their rights to access care. Primary healthcare workers have limited awareness of current protocols, leading to under-diagnosis and under-treatment within iCCM and IMCI.¹⁹ Similarly, policy makers do not always recognize the disease burden, resulting in reduced prioritization and funding. In general, pneumonia is described in many ways in data collection and publications—acute respiratory infection, fast breathing, chest indrawing—but lacks a singular “identity.” As a result, attention currently given to pneumonia is not commensurate to its disease burden.²⁰

¹⁷ These include the National Child Health Policy, National Policy on Medical Oxygen in Health Facilities; National Strategy on the Scale-up of Medical Oxygen; Nigeria Every Newborn Action Plan; Nigeria’s Call to Action to Save Newborn Lives; Reproductive, Maternal, Newborn Child; Adolescent Health and Nutrition; National Treatment Standard Guidelines (NTSG); National Essential Medicines List (NEML); National Essential Equipment List (NEEL); and National Standing Orders (NSO).

¹⁸ UNICEF and Nigeria Bureau of Statistics, MICS Survey, 2016-2017

¹⁹ Additionally, broader challenges around weak health systems exacerbate the severity of the disease.

²⁰ Stakeholder consultations, 2018

1.3 Rationale for this strategy

Against this backdrop, the national pneumonia control strategy and implementation plan aims to elevate pneumonia within the integrated newborn and child health agenda. This requires providing concrete priorities and recommendations—as well as coordination and accountability mechanisms—to strengthen pneumonia control within integrated programming. Specifically, the strategy seeks to:

- **“Put pneumonia on the map”** by raising awareness across all stakeholders—from mothers to policymakers—about pneumonia’s burden and the need to accelerate progress.
- **Strengthen and build a stronger, multisectoral coalition of partners** to drive action via improved coordination, commitment, and accountability.
- **Strengthen pneumonia control interventions** by identifying gaps in current integrated programming (e.g., lack of pneumonia commodities in the delivery of iCCM) and working with relevant partners to address them.
- **Develop an integrated implementation plan** to provide concrete guidance to a range of government and non-government actors across multiple sectors on how they can better support pneumonia control.

It is important to emphasize that this strategy does not recommend the creation of pneumonia-focused programming or siloed approaches. Rather, it builds on broader policies and strategies (e.g., Primary Healthcare Under One Roof, National Child Health Policy) and existing health service delivery platforms (e.g., iCCM, IMCI). The strategy provides a starting point to ensure attention and funding going to pneumonia are commensurate with its disease burden, and it will continue to adapt and evolve as implementation begins.

2. Strategic vision, priorities, and principles

2.1 Vision

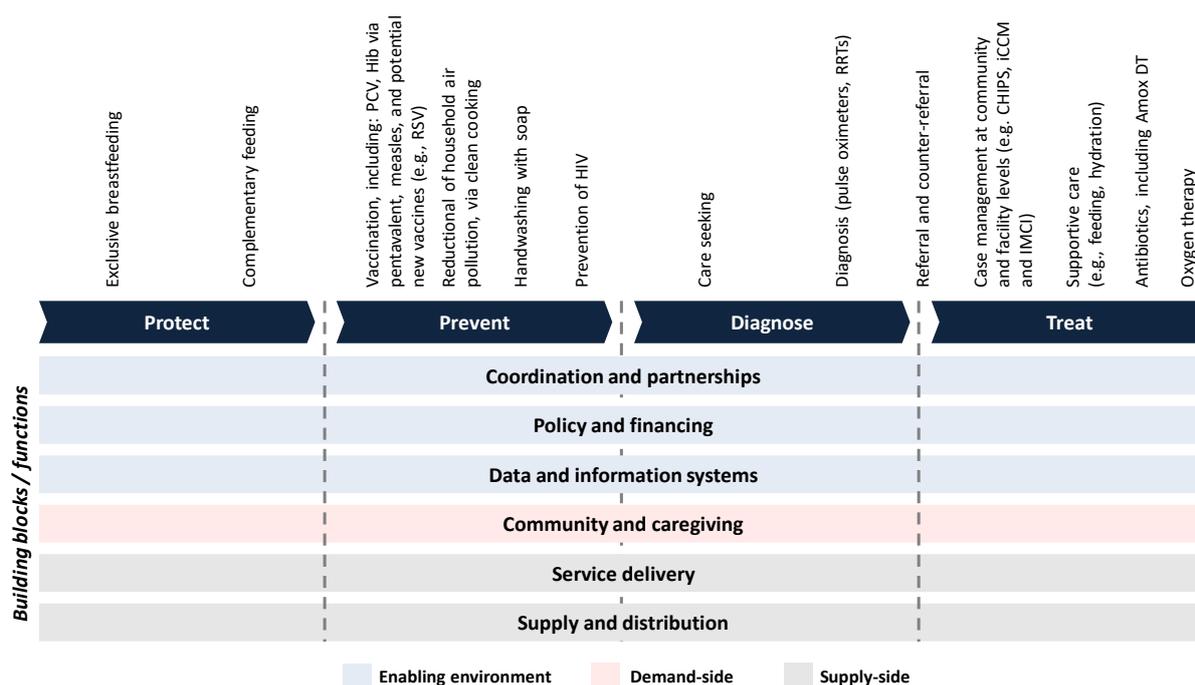
The vision of the strategy is to reduce newborn and child morbidity and mortality caused by pneumonia, in line with integrated health goals. This requires elevating the identity, visibility, and permanence of pneumonia within the integrated newborn and child health agenda and key delivery platforms, such as iCCM, CHIPs and IMCI. Pneumonia will therefore be better controlled and managed, including prevention, identification, diagnosis, and appropriate and affordable treatment. The strategy will also improve ability to better collect and analyse data on pneumonia mortality and morbidity.

2.2 Strategic priorities

To achieve this vision, strategic priorities aim to strengthen the quality and reach of proven pneumonia control interventions within integrated programming. To catalyse this change, the priorities relate to strengthening the enabling, demand-side, and supply-side aspects of pneumonia control—which are needed to deliver the 10+ preventive and curative interventions across the multidisciplinary continuum of protection against, prevention, diagnosis, and treatment. The figure below depicts this matrix relationship.

While the strategy takes a holistic approach to pneumonia control, the strategic priorities place emphasis on interventions that show the most potential to reduce morbidity and mortality in Nigeria, including: immunization, oral antibiotics, reduction of household air pollution, and improved nutrition.

Figure 3: Strategic priorities and pneumonia control interventions they address



The six priorities first aim to protect and prevent new cases of newborn and childhood pneumonia—and then to effectively diagnose and treat newborns and children who fall ill. They include:

1. **Coordination and partnerships:** Strengthen coordination mechanisms to drive accountability and action around priorities within integrated programming
Target: By 2025, actors working on pneumonia control will have jointly completed all agreed-upon activities within the pneumonia control accountability framework (baseline: N/A)
2. **Policy and financing:** Drive political commitment and action, especially at the subnational level, and mobilize sustainable financing across sectors
Target: By 2025, 10 states with highest pneumonia burden have domesticated this strategy and have dedicated budget lines for integrated health activities (i.e., routine immunization, iCCM, and IMCI) that support pneumonia control (baseline: N/A).
3. **Data and information systems:** Include pneumonia-relevant metrics in health information systems to enable collection and use of high-quality data on disease burden and interventions
Target: By 2025, 10 states with highest pneumonia burden use pneumonia-relevant data collected by registers and HMIS/DHS2 to inform programmatic and budgeting decisions (baseline: N/A)
4. **Community prevention and care-seeking:** Improve caregiver awareness and change behaviour to better prevent, recognize, and seek care for pneumonia
Target: By 2025, 45% of households cook with clean sources, 49% of mothers exclusively, 64% of mothers recognize fast breathing or difficult breathing as danger signs, and 73% of mothers seek care when children show ARI symptoms (baselines: 2.7%, NDHS 2013; 24%, MICS 2016/2017; 39%, MICS 2016/2017; 35%, NDHS 2013)²¹
5. **Service delivery:** Increase the quality and coverage of pneumonia control interventions within integrated service delivery across public and private points of care

²¹ Does not include those seeking care at PPMVs

Target: 90% of patients seeking care are correctly diagnosed and treated and/or referred at each point of care (baseline: 36% received antibiotics and care, NDHS 2013)

6. **Supply and distribution:** Scale up products required for pneumonia control—including vaccines, Amox DT, medical oxygen and pulse oximetry, and clean cooking fuels—via relevant supply chains

Target: By 2025, states reach 72% coverage of PCV and Pentavalent, 50% stock availability of Amox DT across, community health workers, PHCs, and PPMVs, and safe delivery of oxygen to 100% of hypoxemia patients (baselines: 33%, WHO 2016; unknown for Amox DT; less than 55% for oxygen²²)

These strategic objectives and their targets stem from extensive consultations and analysis of barriers, as detailed in [Annex B](#). The cross-cutting guiding principles in the following section impact all the strategic priorities and their corresponding interventions and activities.

2.3 Guiding principles

Several guiding principles will create the foundation for strong pneumonia control in Nigeria and help drive impact across all strategic priorities. These principles cut across the strategic interventions and form the primary lens for activities within this strategy. They include:

- **Integration.** Ensure that all recommended interventions and activities integrate into existing child health, community health, primary health, and other related programs (e.g., women’s empowerment). In practice, this means encouraging better protection and prevention against a range of risk factors that jeopardize newborn and child health (not just pneumonia) and promoting integrated service delivery at the point of care. Tactically, the strategy aims to strengthen pneumonia interventions within existing programs and delivery platforms, such as iCCM and IMCI, that government and partners are already supporting.²³ This integrated approach requires close coordination across government programs and levels, partners, and sectors to fully leverage existing programs, platforms, and resources rather than creating pneumonia-specific programming.
- **Focus and prioritization.** Focus on a realistic and feasible number of interventions that are most critical for populations with the highest pneumonia burden, suitable to the state’s local context—rather than trying to do everything—while increasing the visibility of pneumonia within the child health agenda and ensuring consideration of pneumonia-specific challenges and solutions.
- **Quality.** Focus on improving the quality of integrated care across all points of care—including community, facilities, PPMVs, and private sector providers—in line with global standards.²⁴
- **Use of evidence and learning.** Improve access to data and information across the full patient journey—from protect to treat—that can be analysed to improve awareness of pneumonia, strengthen interventions and activities, and course correct through data-driven decision making to improve quality of care.
- **Equity.** Ensure all newborns and children in Nigeria—with a focus on those from low income households, vulnerable populations, and hard-to-reach areas—benefit from improved efforts to protect against, prevent, diagnose, and treat pneumonia.

2.4 Stakeholder roles and responsibilities

The pneumonia control ecosystem involves a complex landscape of actors, and therefore requires extensive coordination to achieve targeted mortality and morbidity reductions. There are various

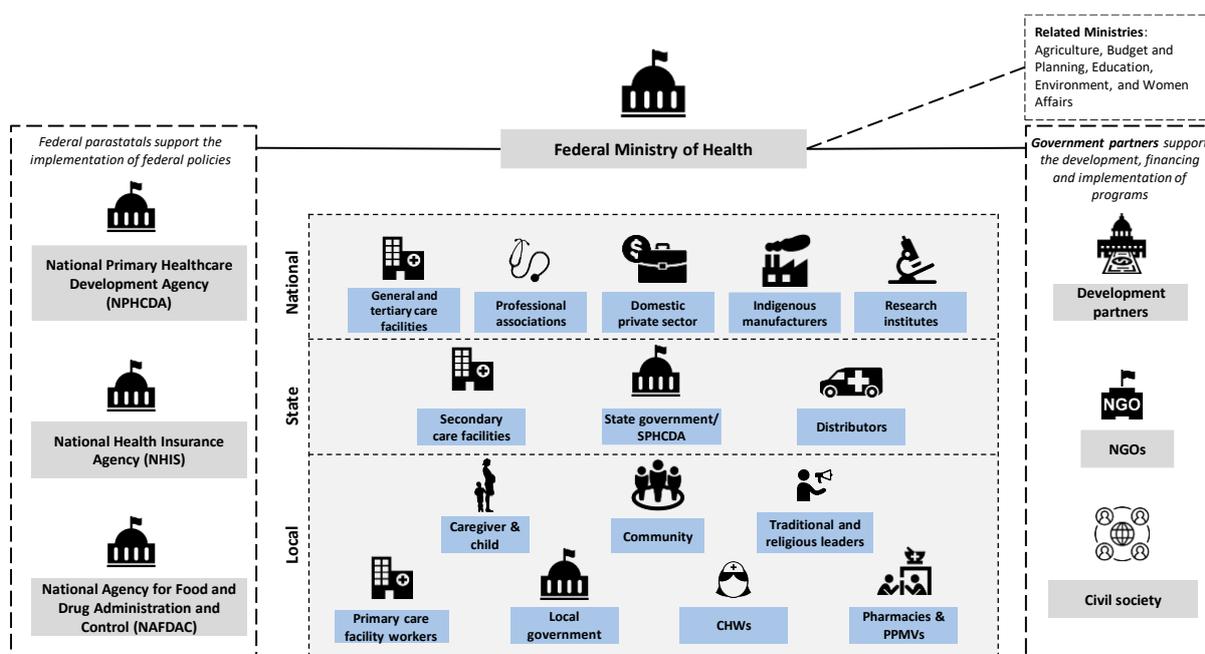
²² According to National Strategy for the Scale-up of Medical Oxygen in Health Facilities, of 853 secondary and tertiary health facilities assessed, only 55% provided functional oxygen therapy and 11% provided pulse oximeters.

²³ Currently, several partners are supporting iCCM activities via malaria programming. This includes the Global Fund and the United States President’s Malaria Initiative. This malaria programming provides a strong entry point to strengthen pneumonia control interventions.

²⁴ For additional information on paediatric quality of care standards, please see WHO, “[Standards for improving the quality of care for children and young adolescents in health facilities](#),” 2018.

actors engaged in pneumonia control across the national, state, and local levels in Nigeria. These actors cut across government, private sector, development partners, civil society, and non-governmental organisations, who serve a range of functions including policy formulation, provision of health services, financing healthcare, and the production and distribution of medical commodities. All these actors are necessary to drive success efforts with pneumonia control. The image below illustrates the stakeholder landscape, and Annex B provides more information on key roles and responsibilities of each actor.

Figure 4: Overview of actors working on pneumonia control in Nigeria



3. Integrated recommendations and activities

Each strategic priority includes priority interventions and national and state-level activities that build on existing policies and programs. The sections below summarize priority recommendations for each strategic priority, and the implementation plan in Annex A contains additional information on activities within each recommendation.

3.1 Coordination and partnerships²⁵

Strategic objective: Strengthen coordination mechanisms to drive accountability and action around priorities within integrated programming.

Key interventions and products: This strategic priority relates to all protect, prevent, diagnose, and treat interventions.

Relevant existing efforts: Please see Annex B.

Key challenges: Pneumonia suffers from two layers of coordination challenges: (i) those related to coordination of health priorities and programming in general, (i.e., limited coordination across various actors, fragmented and/or siloed programming, varying priorities across states, limited funding and accountability), and (ii) limited visibility and attention within existing coordination mechanisms.

²⁵ In this context, “partnership” refers to two or more parties working together, through informal or formal arrangements, to strengthen pneumonia control

Priority recommendations:

- 1.1 **Appoint implementation coordinator within the Federal Child Health Technical Working Group (CHTWG) to work with public and private actors to integrate and amplify pneumonia control activities within their work.**²⁶ Key national-level activities include clarifying the CHTWG is the coordinating body for pneumonia control and appointing an implementation coordinator who will support FMOH and partners for 1-2 years with strategy implementation. This includes working with existing integrated newborn and child health programming (e.g., iCCM, IMCI, routine immunization, nutrition) to identify opportunities to strengthen pneumonia control and implement these changes.
- 1.2 **Develop accountability framework for strategy and integrate into broader newborn and child health efforts.** Key national-level national activities include developing and implementing an accountability framework for this strategy, and recommending that it be integrated into a broader accountability framework around newborn and child health, building on existing work via Saving One Million Lives (SOML).²⁷
- 1.3 **Ensure states have relevant coordination mechanism with appointed implementation coordinators to help drive accountability at state and local levels.** Where states have limited financial support for implementation, states can appoint the IMCI coordinator to drive implementation. At the state level, key activities include ensuring a coordination mechanism with an explicit mandate for newborn and child health exists, appointing someone within this mechanism to act as the implementation coordinator for this strategy, and orienting and training these coordinators on their roles.
- 1.4 **Strengthen coordination across Ministries and sectors involved in pneumonia control at the national and subnational levels.** Key national-level activities include ensuring all relevant Ministries (i.e., Ministries of Education, Environment, Women Affairs, Agriculture and Rural Development, Water Resources, Information) and priority partners from other sectors (e.g., actors working on clean cooking) are members of the CHTWG and that a representative from each attends all CHTWG meetings.
- 1.5 **Strengthen linkages between federal and state coordination mechanisms.** Key activities include hosting meetings 2-4 times a year between the national implementation coordinator and the state-level implementation coordinators to discuss progress, troubleshoot issues, and share learnings.

Please see [Annex A](#) for national-level and state-level activities to support each recommendation.

3.2 Policy and financing

Strategic objective: Drive political commitment and action, especially at the subnational level, and mobilize sustainable financing across sectors.

Key interventions and products: This strategic priority relates to all protect, prevent, diagnose, and treat interventions.

Relevant existing efforts: Please see [Annex B](#).

Key challenges: Domestic resources going toward primary healthcare, as measured by allocations and releases, remain insufficient. This affects all newborn and child health priorities, including pneumonia control. For example, iCCM remains primarily donor-funded, and IMCI faces similar challenges. Unlike other newborn and child health priorities (e.g., malaria), pneumonia has no dedicated funding and

²⁶ Implementation coordinator can be the focal point in states with strong implementation, while the IMCI focal person will lead efforts in other states

²⁷ This would need to be developed

few champions. As a result, pneumonia morbidity and mortality are less visible within integrated health programs and there is limited accountability around performance and impact.

Priority recommendations:

- 2.1 Secure champions and broader support for pneumonia control.** Pneumonia is currently a “forgotten killer” and requires dedicated advocacy and champions to change this situation. At the national level, key activities include advocating for pneumonia control at key fora (e.g., Nigeria Governors’ Forum, the Legislature Network for Universal Health Coverage, NPHCDA quarterly meetings, World Pneumonia Day) and appointing a pneumonia champion (e.g., a family member of a governor) in each state. At the state level, key activities include supporting civil society, faith-based organizations, and other groups to advocate to subnational governments and local authorities on the importance of pneumonia control within integrated newborn and child health priorities.
- 2.2 Ensure domestication,²⁸ dissemination, and implementation of this strategy and other pneumonia-related policies at the subnational level.** Many policies exist but suffer from implementation challenges at sub-national levels. At the national level, key activities include enumerating a list of multisectoral policies that support pneumonia control (e.g., inclusion of Amox DT in EML, Sustainable Energy for All Action Agenda), assessing current implementation progress across states, engaging states with the largest implementation gaps, and using the accountability framework (see section 3.1 on coordination and partnerships) and publication of newborn and child health “state dashboards” to drive progress. At the state level, key activities include domestication and dissemination of policies to relevant actors (e.g., health facilities) and integrating pneumonia control activities into MOU agreements.
- 2.3 Mobilize financial resources²⁹ across multiple sectors to support pneumonia control efforts, in line with accountability framework to ensure principle of value for money.** Successful pneumonia control hinges on increased domestic resource mobilization for health. At the national level, key activities include developing a concise investment case for pneumonia control; presenting this case to the Ministry of Finance, Ministry of Budget and Planning, and national legislature; engaging private sector and philanthropic actors who may be interested in supporting pneumonia control; and coordinating with non-budgetary platforms (e.g., Global Financing Facility, Gavi HSS) to ensure inclusion of priority pneumonia control activities, especially in high-burden states. Activities will also leverage current BHCPF successes (e.g. 1% allocation of Consolidated Revenue Fund), to ensure long-term sustainability. At the state-level, key activities focus on advocating for greater health spending, overall, and integrating priority pneumonia control activities (e.g., iCCM, IMCI, routine immunization) into budgets, SOML workplans, and health insurance schemes. This will require tailoring the investment case to present the health, economic, and political benefits of pneumonia control to State Ministries of Budget/Economic Planning, state legislatures, SMOHs, and SPHCDA.

Please see [Annex A](#) for national-level and state-level activities to support each recommendation.

3.3 Data and information systems

Strategic objective: **Include pneumonia-relevant metrics in health information systems to enable collection and use of high-quality data on disease burden and interventions.**

Key interventions and products: This strategic priority relates to all protect, prevent, diagnose, and treat interventions—with a focus on Amox DT and oxygen.

²⁸ Meaning adoption and/or adaptation

²⁹ This includes several streams of financing: statutory, national budget commitments, state budget commitments, non-budgeting processes, private sector, and community

Relevant existing efforts: Please see [Annex B](#).

Key challenges: Existing health information systems lack data focused on pneumonia burden and interventions, specifically, and instead rely on a range of proxies. The NDHS captures ARI burden, but not pneumonia specifically. The HMIS lacks key indicators on pneumonia diagnosis—including level of severity of pneumonia (severe, and hypoxemia) and corresponding treatment rates with Amox DT and oxygen.³⁰ At facility and community points of care, respiratory rate and oxygen saturation (SpO₂) are not tracked as routine vital sign indicators.

Priority recommendations:

3.1 Advocate for the inclusion of pneumonia-relevant indicators in routine data collection via HMIS and DHIS2. Creating an “identity” for pneumonia requires more focused efforts to collect data on pneumonia burden and interventions. Key activities include adding respiratory rate and oxygen saturation as routine vital sign indicators in registers and advocating for the inclusion of pneumonia-relevant metrics in the HMIS (i.e., severity of pneumonia, % of patients with non-severe pneumonia treated with Amox DT, % patients with severe pneumonia treated with first- or second-line antibiotics, and % of hypoxemic patients treated with oxygen). The FGN and partners should also continue to strengthen measurement of pneumonia burden, distinct from ARIs, via paediatric death audit and reviews and/or dedicated studies.³¹

3.2 Strengthen aspects of data collection, analysis, and use most critical for pneumonia-relevant indicators at subnational levels. It is critical to better collect, analyse, and use pneumonia-relevant data to understand the landscape, make decisions, and improve the quality of interventions. At the national level, it is critical to expedite the roll out of community HMIS tools. At the state level, it is critical to train facilities on how to analyse DHIS2 data (using WHO module) so that they can use it to make decisions and improve quality of care.

Please see [Annex A](#) for national-level and state-level activities to support each recommendation.

3.4 Community prevention and care-seeking

Strategic objective: **Improve caregiver awareness and change behaviour to better prevent, recognize, and seek care for pneumonia.**

Key interventions and products: This strategic priority relates to all protect, prevent, and diagnose interventions such as exclusive breastfeeding, complementary feeding, vitamin A supplementation, immunization, reducing household air pollution, HIV prevention, and recognition of danger signs. This also includes creating demand for key commodities and products, including clean cooking fuel, immunizations, and Amox DT. More broadly, the priority reflects the need to foster meaningful community engagement to drive awareness and action for pneumonia control.

Relevant existing efforts: Please see [Annex B](#).

Key challenges: Pneumonia prevention, recognition of danger signs, and care-seeking behaviour remain low across caregivers (e.g., mothers). For example: 2.7% of households cook with clean sources, current coverage of PCV is 36%,³² 17%³³ of children under six months are exclusively

³⁰ Subnational data on PCV coverage is currently unavailable, given PCV was introduced to the routine system after the 2013 NDHS. This data should be available in the next NDHS.

³¹ Based on current scientific knowledge and technologies (e.g., lack of a biomarker for pneumonia), it is not possible to measure pneumonia burden (distinct from ARIs) via household surveys, such as the NDHS.

³² WHO and UNICEF estimates of immunization coverage, 2017; accessed from: https://www.who.int/immunization/monitoring_surveillance/data/nga.pdf

³³ National Bureau of Statistics, National Demographic and Health Survey, 2013

breastfed, and 35%³⁴ of mothers seek care when their children demonstrate ARI symptoms. This stems from a lack of awareness, low acceptance of and/or access to certain interventions and limited follow up to spur behaviour change. For additional detail on challenges, please see Annex B.

Priority recommendations:

- 4.1 Improve awareness across caregivers, household influencers, and community on how to protect, prevent, recognize, and understand the potential severity of pneumonia.** Awareness and knowledge are key building blocks to increase preventive and care seeking behaviours. At the national level, key activities include identifying, adapting, and endorsing existing information, education, and communication (IEC) materials on pneumonia control—that target caregivers, trusted influencers, and broader communities—and disseminating this messaging to states. At the state level, key activities include identifying existing awareness and behaviour change campaigns—or launching new health campaigns, as needed—integrating tailored pneumonia control IEC materials into these campaigns, and disseminating messages through priority channels (i.e., traditional leaders, religious organisations, peer support groups, radio, social media, workplace events, and market meetings) to build knowledge.
- 4.2 Use community structures to reinforce pneumonia messaging, increase acceptance of interventions, and drive behaviour change via engagement and follow up with mothers and caregivers.** Beyond improving awareness and knowledge, changing behaviour requires additional interventions and continued follow-up to reinforce learnings, model good behaviour, change norms, and encourage target populations to act, where pneumonia and other newborn and child health priorities are concerned. At the state level, activities include identifying priority community structures (i.e., faith-based organisations, religious leaders, traditional leaders, community support groups, community health workers) and using these structures to follow up with caregivers via house-to-house visits, compound meetings, and community dialogues and events.
- 4.3 Empower communities to own pneumonia control and ensure accountability.** Sustained action requires community accountability and follow through. At the state level, key activities include tracking key protective and preventive behaviours (e.g., immunization rates via “defaulter lists,” breastfeeding, use of clean cooking fuels) and related outcomes (e.g., household air pollution levels) and creating accountability mechanisms, such as newborn and child health scorecards that include pneumonia control.

Please see Annex A for national-level and state-level activities to support each recommendation.

3.5 Service delivery

Strategic objective: **Increase the quality and coverage of pneumonia control interventions within integrated service delivery across public and private points of care.**

Key interventions and products: This strategic priority relates to all diagnose and treat interventions. It also relates to protection and preventive interventions that community health workers, facility workers, PPMVs, and other health care providers can help promote (e.g. immunization, adequate nutrition).

Relevant existing efforts: Please see Annex B.

Key challenges: First, the coverage of key preventive and curative pneumonia services remains low. For example, on the prevention side, 36% of children have received all doses of PCV.³⁵ On the

³⁴ Ibid

³⁵ WHO and UNICEF estimates of immunization coverage, 2017; accessed from: https://www.who.int/immunization/monitoring_surveillance/data/nga.pdf

prevention and diagnosis side, less than half of states are implementing iCCM and/or IMCI.³⁶ Second, the quality of pneumonia control within integrated programming (e.g., iCCM, IMCI) remains low, primarily due to insufficient health worker skills and capacity and limited availability of key commodities and products, such as Amox DT (for the latter, see section 3.6 on supply and distribution). For additional detail on challenges, please see Annex B.

Priority recommendations:

- 5.1 **Reinforce efforts to scale routine immunization, iCCM, and IMCI across states and LGAs, especially those with high pneumonia burden.** Given the majority of states are not currently implementing iCCM and IMCI, it is critical to continue expanding these delivery platforms. This relates to the policy & financing recommendations in section 3.2.
- 5.2 **Strengthen pneumonia control interventions through community-based care, including iCCM.** Strengthening the pneumonia components within iCCM is required to improve the quality of care at the community level. At the national level, key activities include updating training manuals, materials, job aids, and supervision tools to increase community-oriented resource persons' (CORPs) index of suspicion, knowledge of diagnostic and treatment protocols (e.g., how to take respiratory rate), and knowledge of protective and preventive interventions (e.g., immunization, clean cooking). Another key priority is to ensure the pneumonia commodities are provided in all places where iCCM is being implemented. At the state level, key activities focus on improving mentorship and supervision for community health workers and strengthening the referral system between the community and primary health facilities.
- 5.3 **Strengthen pneumonia control interventions within facility-based care, including IMCI.** The primary health system serves as the first point of contact between care seekers and the institutional health system where care is delivered, sometimes through IMCI. Key activities to strengthen pneumonia interventions within IMCI focus on building health worker skills and capacity—by reviewing and updating pre-service and in-service training materials for all facility-based workers (i.e., CHEWs, nurses, midwives, doctors), updating and disseminating user-friendly job aids, and improving mentorship. Other key activities include further strengthening the referral system and, reinforcing the integration of routine immunization in PHC services via Optimised Integrated Routine Immunization Sessions (ORIS), and supporting the “second year of life” platform to provide missed and/or additional doses of vaccines to children.³⁷
- 5.4 **Engage private sector service providers, including PPMVs, and civil society organisations.** The private sector plays a leading role in providing care; in particular, PPMVs are the first point of care for the majority of sick newborns and children. At the national level, key activities include engaging the association of private practitioners to strengthen continuous medical education. At the state level, key activities include engaging and training PPMVs on appropriate diagnosis and care protocols for management of newborn and child illnesses (e.g., iCCM), including pneumonia, and strengthening the referral systems between the private and public health facilities.

Please see [Annex A](#) for detailed national-level and state-level activities to support each intervention.

3.6 Supply and distribution

Strategic objective: Scale up products required for pneumonia control—including vaccines, Amox DT, medical oxygen and pulse oximetry, and clean cooking fuels—via relevant supply chains.

Key interventions and products: Given the dynamic nature of pneumonia control, there are many products relevant to protection against, prevention, diagnosis, and treatment (see Annex B). This strategy prioritises routine immunization, Amox DT, oxygen, hypoxemia diagnostics, oxygen-related

³⁶ Exact estimates of number of states implementing iCCM and IMCI vary.

³⁷ The “second year of life” platform aims to help children catch up with missed doses or receive additional doses of vaccinations. It is not elaborated in the NSIPSS.

products (e.g., blenders, flow meters, oxygen concentrators, and consumables), and clean cooking fuels. These interventions have been prioritised over others given their role in reducing pneumonia mortality and morbidity and gaps in current efforts.

Relevant existing efforts: Please see [Annex B](#).

Key challenges: Availability of pneumonia commodities and products remains low across points of care. This impedes control across the full continuum of protection, prevention, diagnosis, and treatment.

Priority recommendations:

- 6.1 Support local manufacturing of Amox DT and increase availability across public and private points of care.** Improving access to Amox DT is required to improve treatment outcomes for care seekers. Key activities include undertaking “product switch campaigns” for Amox DT to increase procurement and bulk purchasing, marketing products at professional association conferences and meetings (e.g., NAPPMED), and providing technical support to help local manufacturers of Amox DT obtain GMP certifications, and conducting post market surveillance.
- 6.2 Strengthen the distribution of vaccines to last-mile communities.** Key activities include reinforcing the implementation of the NSIPSS, which includes key supply issues such as cold chains, to increase access to routine immunization (such as Penta, PCV, and measles).
- 6.3 Strengthen the supply of pulse oximetry, oxygen, and related products at facilities.** Pulse oximetry, medical oxygen, and supporting infrastructure are crucial in diagnosing hypoxemia and managing cases of pneumonia that present with hypoxemia. Key activities include promoting measurement of respiratory rate and oxygen saturation as vital signs, forecasting demand for multi-modal products, improving quality assurance processes, and improving maintenance—aligned with the National Strategy for the Scale-up of Medical Oxygen in Health Facilities.
- 6.4 Strengthen the supply of clean cooking fuels and stoves at the community level.** Reducing household air pollution can reduce the risk of pneumonia and decrease likelihood of a case becoming severe—therefore requiring care and management in higher-level referral facilities. Doing so hinges on availability and affordability of clean cooking fuels (e.g., LPG, ethanol, methanol). Key activities focus on engaging private sector fuel suppliers and distributors to present the business case on clean cooking and to connect them to business and communities who could be clients, thereby encouraging expansion of their distribution networks.

Please see [Annex A](#) for detailed national-level and state-level activities to support each intervention.

4. Implementation plan

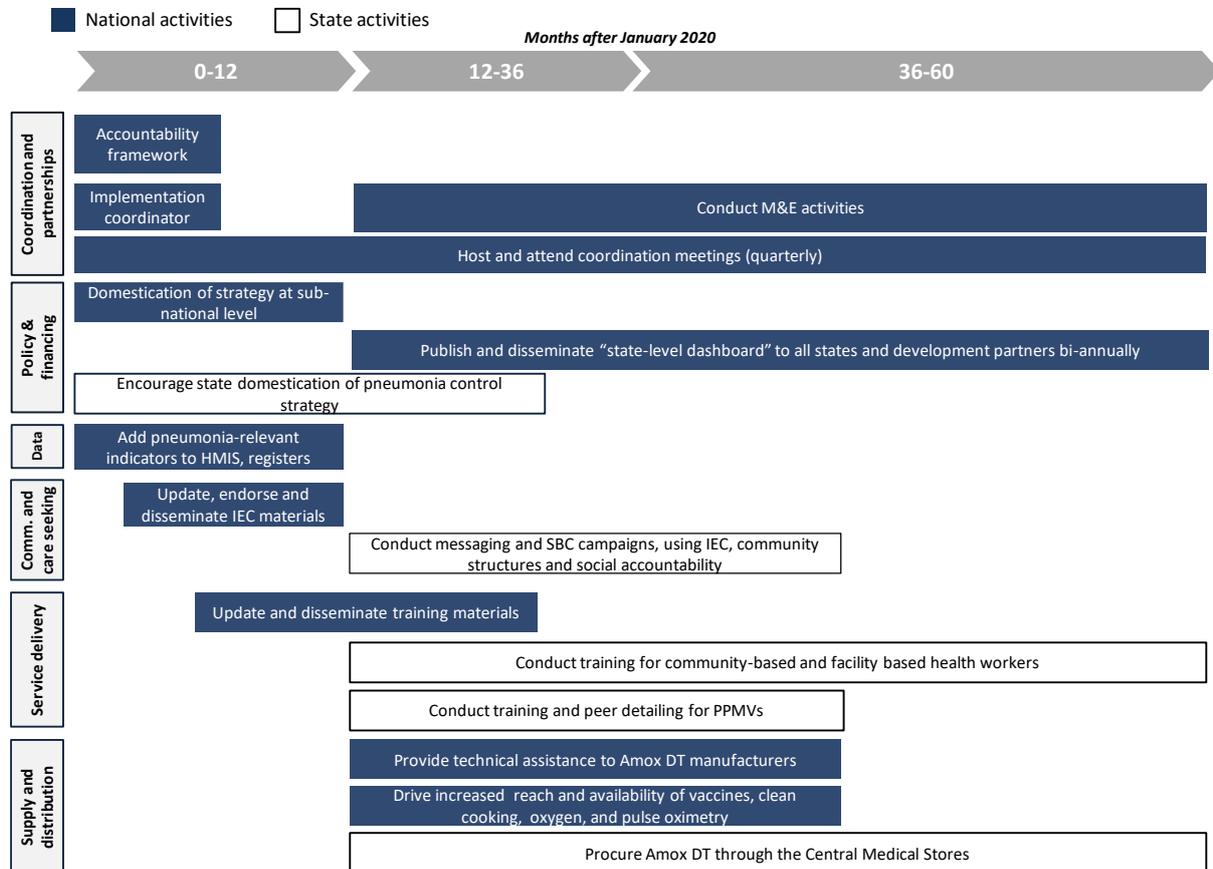
4.1 Five-year action plan

Successful implementation of this strategy will require an integrated, coordinated, and multi-sectoral approach that involves public, private, community, and civil society partners. Activities will take place across the national, state, and local levels—with designated stakeholder(s) responsible for each.

Activities align with existing policies, programs and activities—including routine immunization, IMCI, and iCCM—and ensure sufficient focus on populations with high pneumonia burden. Specifically, activities focus on strengthening pneumonia control interventions within existing integrated programming rather than creating siloed approaches and activities. The action plan also proposes additional activities for high-burden states to implement.

Implementation will take place over three phases that recognise the necessity of first increasing support for pneumonia, and then translating this support into concrete actions. The figure below presents a high-level summary of the five-year action plan, by phase.

Figure 5: Overview of five-year pneumonia control action plan



In years 1 and 2, the top priorities for the strategy include:

- Developing an accountability framework for the strategy and hiring an implementation coordinator to work with FMOH to help drive action across priorities.
- Advocating for, domesticating, and tailoring the strategy at subnational levels. This should involve states examining their current pneumonia control landscape, and based on identified gaps and barriers, prioritizing recommendations to start implementing first—ensuring strong focus on:
 - Scaling routine immunization
 - Strengthening community- and facility-based integrated case management (i.e., iCCM, IMCI)
 - Training PPMVs on integrated case management
 - Increasing availability of Amox DT
 - Increasing caregiver prevention and care seeking
- Adding priority pneumonia-relevant indicators to the HMIS and routine vital sign registers.

Annex A contains the detailed action plan with a comprehensive list of activities to implement to move these priorities forward. The detailed action plan includes the level at which each activity takes place (national, state, local, community, facility), the responsible stakeholder(s), and the timeline.

4.2 Adaptation and tailoring at subnational levels

While this strategy provides high-level guidance at the national level, it must be tailored at the subnational level based on pneumonia drivers, burden, and intervention coverage. The table below provides guidance on the process for state governments and their partners to adapt the recommendations from this strategy to local context and incorporate priority activities into budgets and workplans.

Figure 6: Guidance to tailor strategy at subnational levels

Consideration	How to explore	Outcome
<i>Burden and drivers</i>		
Pneumonia burden: What is the current burden across the state? Which areas have the highest burden?	<ul style="list-style-type: none"> Analyse and interpret available state-level data on burden (e.g., ARI burden, facilities with highest # of pneumonia cases, paediatric death reviews and audits, overall U5 mortality) 	<ul style="list-style-type: none"> Identification of highest burden areas and populations to focus strategy efforts
Pneumonia drivers: What are the main drivers of pneumonia within the state?	<ul style="list-style-type: none"> Analyse and interpret available state-level data on risk factors, drawing on global sources (e.g., Global Burden of Disease), as needed 	<ul style="list-style-type: none"> Identification of risk actors (e.g., malnutrition, household air pollution) that are most important to mitigate Adjusted prioritization of interventions, as needed
<i>Current pneumonia control efforts</i>		
Intervention coverage: Where data is available, what are state-level coverage rates of protect, prevent, diagnose, and treat interventions?	<ul style="list-style-type: none"> Analyse and interpret state-level data on intervention coverage, drawing on NDHS, MICS/NICS, HMIS/DHIS2, facility-level data 	<ul style="list-style-type: none"> Identification of interventions with lowest coverage rates—paying special attention to immunization, oral antibiotics, nutrition, and household air pollution given large influence on mortality and morbidity Adjusted prioritization of interventions, as needed
Relevant programs: How are government and non-government actors currently controlling pneumonia? What could be improved?	<ul style="list-style-type: none"> Identify if/where iCCM is being implemented Identify if/where IMCI is being implemented Identify if/where routine immunization programs are being implemented Identify relevant partner programs (i.e., RMNCH, clean cooking, nutrition) – see figure below for initial mapping 	<ul style="list-style-type: none"> Identification of relevant government programs to leverage for pneumonia control Identification of relevant partner programs to leverage for pneumonia control Identification of where there is a need to introduce/launch new integrated programming (e.g., iCCM)
<i>Priority recommendations and activities across strategic priorities</i>		
Coordination and partnerships: Does a coordinating platform with an explicit mandate for newborn and child health exist?	<ul style="list-style-type: none"> Consult SMOH/SPHCDA 	<ul style="list-style-type: none"> If no platform exists, prioritize putting one in place—and then appoint implementation coordinator If platform exists, appoint implementation coordinator
Policy and financing: What national-level pneumonia-relevant	<ul style="list-style-type: none"> Analyse progress with implementation of pneumonia-relevant policies 	<ul style="list-style-type: none"> Identification and prioritisation of policy and/or financing gaps to address

Consideration	How to explore	Outcome
policies have already been implemented? What commitments exist?	<ul style="list-style-type: none"> Analyse budget commitments to iCCM, IMCI, routine immunization, etc. Analyse any existing MOUs between states and partners, and whether priority pneumonia control activities have been and/or could be included 	<ul style="list-style-type: none"> Identification of opportunities to integrate pneumonia control into existing MOUs
Points of care: What is the breakdown of where sick newborns and children seek care—particularly in high-burden areas?	<ul style="list-style-type: none"> Analyse existing data on where newborns and children seek care (e.g., NDHS, knowledge from previous studies/programming) 	<ul style="list-style-type: none"> Identification of priority points of care (i.e., community, facilities, PPMVs, other) Prioritization of activities related to this point of care, within strategic priority #5

Ultimately, this state tailoring process should help drive alignment around:

- High-burden areas and populations to focus strategy
- Priority interventions to focus on (e.g., immunization, oral antibiotics) based on key risk factors and drivers of pneumonia and current coverage of interventions within the state
- Concrete opportunities to strengthen pneumonia control interventions within integrated programming (e.g., iCCM, IMCI)—or to launch/introduce these programs, if needed
- Priority recommendations and activities to focus on within the strategic priorities, based on key points of care, policy landscape, and coordinating structures within the state

The table below provides an initial mapping of relevant partners and programs that could help implement priority activities in each state.

Figure 7: Mapping of relevant activities within each state (not comprehensive)

Partners	States	Relevant programs
Bill and Melinda Gates Foundation	Niger, Kaduna, Kano, Lagos	<ul style="list-style-type: none"> Primary health system strengthening
Bill and Melinda Gates Foundation, Dangote Foundation, other partners	Kaduna, Sokoto, Yobe, and Borno, Bauchi, Kano	<ul style="list-style-type: none"> MOUs on routine immunization
Catholic Relief Services	Kebbi, Niger	<ul style="list-style-type: none"> iCCM program
Christian Aid	Benue	<ul style="list-style-type: none"> iCCM program
Clinton Health Access Initiative (CHAI)	Kaduna, Kano	<ul style="list-style-type: none"> Pneumonia and diarrhoea programs with PPMVs focused on capacity building, supply chain improvements and referral systems
UK Department for International Development	Jigawa, Kaduna, Kano, Lagos, Yobe	<ul style="list-style-type: none"> Malaria-focused program, delivered through iCCM
UNICEF	Adamawa, Bauchi, Jigawa, Kaduna, Kebbi, Niger, Taraba, Zamfara	<ul style="list-style-type: none"> iCCM program
US Agency for International Development (USAID)	Bauchi, Kebbi, Sokoto	<ul style="list-style-type: none"> Integrated Health Program (IHP), with a focus on newborn health, child health and nutrition Breakthrough ACTION, behavioural change program focused on RMNCH

Save the Children	Jigawa, Lagos	<ul style="list-style-type: none"> • Pneumonia sensitive program
GFF and World Bank IDA (Phase 1)	Adamawa, Bauchi, Borno, Gombe, Taraba, Yobe	<ul style="list-style-type: none"> • Scaling RMNCH services (Nigeria State Health Investment Project), private sector innovations for service delivery, strengthening CRVS system
GFF, BMGF, domestic recourses (Phase 2, 3)	Abia, Niger, Osun; <i>phase 3 of investment case will focus on nationwide scale</i>	<ul style="list-style-type: none"> • Scaling MNCH within BMPHS, strengthening CRVS
GFF, IDA (Phase 4) ³⁸	Selected states; Abia, Akwa Ibom, Gombe, Kano, Kaduna, Katsina, Kogi, Kwara, Nasarawa, Niger, Oyo, Plateau	<ul style="list-style-type: none"> • Accelerating Nutrition services in Nigeria (ANRiN)

4.3 Resource needs and planning

Successful implementation of this strategy will require resources at the national and subnational levels. Moreover, securing these resources will require resource planning and mobilization efforts to secure commitments from government and non-government actors (e.g., development partners, private sector) across multiple sectors (e.g., health, environment, energy).

Given this strategy builds on existing efforts, the majority of resources required are linked to integrated programming that already exists, such routine immunization, iCCM, and IMCI. Understanding these resource needs—many of which are ongoing implementation costs—and how to plan for them requires detailed, bottom-up costing at the national, state, and local levels.

In addition, the strategy requires additional resources over five years to execute catalytic activities that strengthen pneumonia control. While some of these activities will also require more detailed costing (e.g., based on state tailoring), the strategy provides directional estimates at national and subnational levels to support initial resource planning and mobilization:

- **National** resource estimates to implement catalytic activities—beyond existing programming and service delivery—are estimated at approximately 1 million USD, equivalent to less than USD 0.05 per child under five. The figure below summarises the year-on-year costs, by strategic priority. The largest cost drivers are service delivery efforts (such as updates to pre- and in-service training guidelines on community- and facility-based efforts, such as iCCM and IMCI, and continuous medical education with the private sector).
- **Subnational** resource estimates to implement catalytic activities are estimated at approximately 1 million USD per state, on average, depending on population size. This is driven by community engagement and SBC interventions, health worker and PPMV training, and procurement of Amox DT, accounting for ~35%, ~50%, and ~15% of costs respectively in each state. The figure below summarises subnational costs, broken down by year and strategic priority.

³⁸ Phase 5 of the investment case will focus on expanding services within the BMPHS of the BHCPF

Figure 8: National resource estimates for catalytic activities, over five years

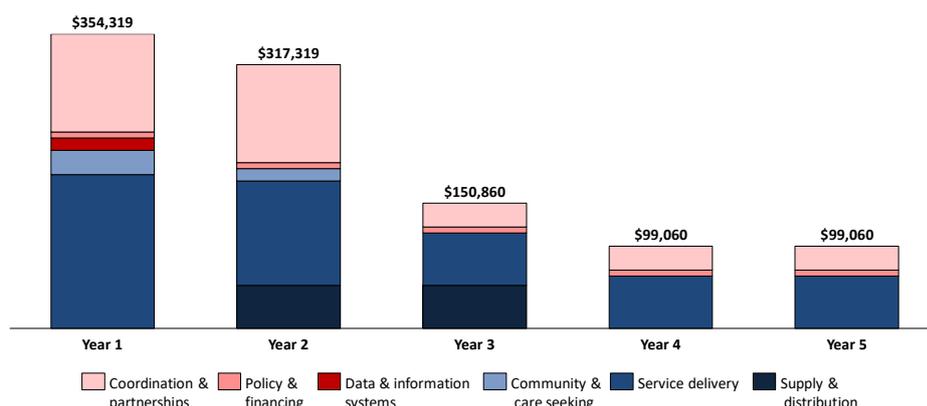
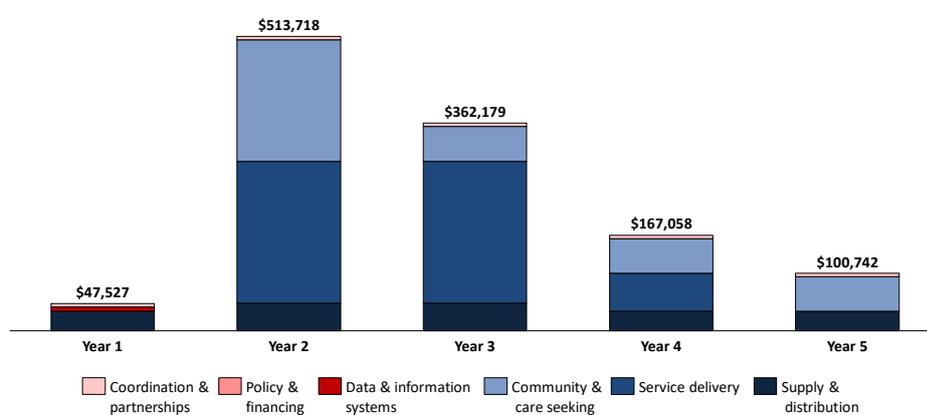


Figure 9: State resource estimates for catalytic activities, over five years



The table below summarizes key cost drivers at national and subnational levels. When domesticating the strategy, state governments and their partners should use these directional estimates as a starting point to mobilize resources and further refine and incorporate into budgets. Similarly, the FGN should work with partners to further update and refine national-level costs and incorporate into budgets.

Figure 10: Overview of cost drivers at national and subnational levels

Strategic priority	National cost drivers	Subnational cost drivers
Coordination and partnerships	<ul style="list-style-type: none"> Update and maintenance of accountability framework Stakeholder engagement Implementation coordinator stipend 	<ul style="list-style-type: none"> Stakeholder engagement Implementation coordinator stipends
Policy and financing	<ul style="list-style-type: none"> Policy dissemination Monitoring of state dashboards Stakeholder engagement 	<ul style="list-style-type: none"> State-level domestication and dissemination of policies
Data and information systems	<ul style="list-style-type: none"> Additional cost of data collection 	<ul style="list-style-type: none"> Coordination
Community and care seeking	<ul style="list-style-type: none"> Updates to IEC materials Dissemination of IEC materials 	<ul style="list-style-type: none"> Messaging and SBC campaigns Community engagement Social accountability interventions
Service delivery	<ul style="list-style-type: none"> Updates to iCCM training manuals, materials, job aids, etc. Updates to facility-based training Updates to community workers' initial training before deployment 	<ul style="list-style-type: none"> Incremental facility-based and community-based health worker training PPMV training, including peer

Strategic priority	National cost drivers	Subnational cost drivers
	<ul style="list-style-type: none"> Dissemination of training materials and updated guidelines 	detailing
Supply and distribution	<ul style="list-style-type: none"> Technical assistance to manufacturers of Amox DT 	<ul style="list-style-type: none"> Procurement of medical commodities, drugs, equipment Wholesale activation Product switch campaigns

4.4 Risks and mitigation approaches

FMoH and NPHCDA leadership, state ownership, and multisector coordination will underpin success of this strategy. The table below summarizes key risks that could impede successful implementation, as well as proposed mitigation approaches. Where possible, the process to develop the strategy and implementation plan considered these risks.

S/N	Risk	Mitigation measures
1	Limited sub-national ownership and action	<ul style="list-style-type: none"> <i>States across the geopolitical zones have been included in the strategy development process, to ensure inclusion and shared ownership</i> Focus on continuing to secure political commitment at the subnational level during the first year Continue to engage states via existing platforms, such as the Nigeria Governors' Forum Explore results-based financing mechanisms to incentivize state commitment and action, building on SOML PFR and basket fund model for routine immunization
2	Lack of funding to implement recommendations and activities	<ul style="list-style-type: none"> Integrate activities into existing government and partner programs focused on newborn and child health Implement activities in phases
3	Lack of sustained engagement from key stakeholders	<ul style="list-style-type: none"> Empower the implementation coordinator to regularly engage and follow up with key stakeholders, via the Child Health Technical Working Group (CHTWG), one-on-one meetings, and other channels Regularly report on and publish progress, using the accountability framework and state-level dashboards Sign MOUs between states and partners Promote high-profile events and media efforts to showcase progress and maintain interest
4	Creation of vertical and fragmented efforts	<ul style="list-style-type: none"> <i>Strategy has been designed to integrate with community-based and facility-based delivery platforms, including iCCM and IMCI, and ongoing government partner efforts</i> Deliver all activities via existing programs and services, wherever possible, rather than creating standalone programming
5	Insufficient focus on high-burden states	<ul style="list-style-type: none"> Actively bring attention to and mobilize resources to support high-burden states, via the CHTWG and the implementation coordinator Include in mandate of implementation coordinator the responsibility to closely support and track progress in high-burden states Disaggregate all progress updates by high-burden states, to clearly showcase progress and bring attention
6	Insufficient coordination across range of actors—especially actors	<ul style="list-style-type: none"> Involve all relevant actors in CHTWG meetings Regularly share meeting notes and updates to ensure inclusion and alignment

S/N	Risk	Mitigation measures
	outside the health system	<ul style="list-style-type: none"> Follow up with key actors and groups, as needed, via FMOH and implementation coordinator

5. Monitoring, evaluation, learning, and accountability

To drive results, the strategy requires ongoing monitoring & evaluation efforts (M&E) to measure and track progress. Throughout implementation, the FMOH and the appointed implementation coordinator will lead efforts to collect, analyse, interpret, and disseminate relevant M&E data. This will require close coordination between FMOH, other Ministries, the NPHCDA and other parastatals, SMOHs and SPHCDA, and development partners. Moreover, M&E efforts will build on existing data and information systems (e.g., HMIS data, development partner reporting), where possible, to avoid duplication of efforts.

Implementation will also be guided by the best practise in learning and the use of program data to make program improvements. This will be driven by evidence gathering across local, state and federal levels from all key stakeholders to improve strategy implementation.

Key components of the M&E approach include:

- Alignment with existing newborn and child health targets
- Specific outcome and output indicators to track progress for each strategic priority
- Development and use of detailed accountability framework and state-level dashboards

The following sections provide a high-level summary of these components, which will need to be further developed in year 1 of the strategy.

5.1 Indicators and targets

Existing newborn and child health targets

This strategy reinforces existing targets for newborn and child health in Nigeria and will track progress against these targets throughout implementation. The table below summarizes these targets—which primarily relate to the strategy’s overall vision and strategic priorities on community prevention and care seeking and service delivery.

Figure 11: Overview of existing targets relating to newborn and child health^{39,40,41}

Area of strategy	Existing targets
Vision / crosscutting	<p><i>Newborn and child mortality (targets for 2025)</i></p> <ul style="list-style-type: none"> • 50% reduction in neonatal mortality rate from 37/1000 live births • 50% reduction in infant mortality rate from 75/1000 live births • 50% reduction in under-five mortality rate from 128/1000 live births
Community prevention and care seeking	<p><i>Nutrition (targets for 2025)</i></p> <ul style="list-style-type: none"> • 65% of mothers exclusively breastfeed, in first 6 months of life • 50% reduction in under-five stunting • 45% reduction in under-five wasting <p><i>Clean cooking, based on Sustainable Energy for All Action Agenda and National Renewable Energy Action Plan (targets for 2030)</i></p> <ul style="list-style-type: none"> • 80% of population uses modern cooking fuel⁴²

³⁹ FMOH, Reproductive, Maternal, Newborn, Child, Adolescent Health and Nutrition, Investment Case, 2017

⁴⁰ NPHCDA, NSIPSS Strategy, 2018

⁴¹ Federal Ministry of Budget and National Planning, National Policy on Food and Nutrition in Nigeria, 2016

⁴² Target for 2020 is 10%

Service delivery	<i>Immunization, based on NSIPPS (targets for 2025)</i> <ul style="list-style-type: none"> All relevant vaccines (PCV, Pentavalent, measles) reach 84% national coverage by 2028; this would be ~72% by 2025
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Pneumonia-specific targets and indicators

The strategy also puts forward specific indicators to help elevate pneumonia control within the integrated newborn and child health agenda—as well as across sectors. Specifically, each of the six strategic priorities has an overarching outcome indicator and target, as well as more detailed output indicators to track progress towards overarching goals. The table on the follow page summarizes this information, per strategic priority. Where relevant, the outcome indicators and targets align with existing targets presented early in section 5.1. These indicators should be further refined in year 1 of strategy implementation, led by the implementation coordinator and the FMoH.

5.2 Accountability

Together, the five-year action plan, targets, and indicators will form the basis of an accountability plan for the strategy. Per the GAPPD, a strong accountability framework must include three critical components:

- Monitoring – collecting and tracking progress against planned activities and their results
- Review – assessing whether commitments have been seen through, and what types of results they are leading to
- Remedial action – making recommendations to government and non-government actors about how to address shortcomings or gaps identified during review⁴³

The activities associated with recommendation 1.2 in section 3.1 on coordination and partnerships lay out a plan to develop this accountability framework in year 1 of the strategy. The FMoH and the implementation coordinator will lead this process, with input from all partners

⁴³ UNICEF and WHO, “Ending Preventable Child Deaths from Pneumonia and Diarrhea by 2020: The integrated Global Action Plan for Pneumonia and Diarrhea (GAPPD),” 2013

Figure 12: Specific indicators and targets for strategy

Strategy priority	Outcome indicator and target	Output indicators
1. Coordination and partnerships	By 2025, actors working on pneumonia control have jointly completed all agreed-upon activities within the pneumonia control accountability framework (baseline: N/A)	<ul style="list-style-type: none"> • Implementation coordination hired within 3 months of strategy launch • Accountability framework and state-level dashboard created within 6 months of strategy launch • Percentage of CHTWG meetings addressing pneumonia • Average attendance rate of representatives from non-FMoH government Ministries and priority partners from other sectors attending each CHTWG meeting • % of states with coordinating mechanism with explicit mandate for newborn and child health • % of state-level coordinating mechanisms with appointed pneumonia champion
2. Policy and financing	By 2025, 10 states with highest pneumonia burden have domesticated ⁴⁴ this strategy and have dedicated budget lines for integrated health activities (i.e., routine immunization, iCCM, and IMCI) that support pneumonia control (baseline: N/A)	<ul style="list-style-type: none"> • # of states engaged by FMOH, NPHCDA, or dev partners to advocate for strategy implementation • % of states with budget line for iCCM and evidence of release or similar community-based program (e.g., CHIPS) • % of states with budget line for IMCI and evidence of release or similar facility-based program • % of states with budget line for routine immunization program and evidence of release • % of states with funds released for the BHCPF
3. Data and information systems	By 2025, 10 states with highest pneumonia burden use pneumonia-relevant data collected by registers and HMIS/DHS2 to inform programmatic and budgeting decisions (baseline: N/A)	<ul style="list-style-type: none"> • % of the ten high-burden states that include respiratory rate and SPO2 in community and facility registers • % of recommended pneumonia-relevant indicators included in HMIS/DHS2 • % of states that identify areas with the highest pneumonia burden and allocate budget to them
4. Community prevention and care seeking	<p>By 2025,</p> <ul style="list-style-type: none"> • 45% of households cook with clean sources (baseline: 2.7%, NDHS 2013) • 49% of mothers exclusively breastfeed (baseline: 24%, MICS 2016/2017) • 64% of mothers recognize fast breathing or difficult breathing as danger signs (baseline: 39%, MICS 2016/2017) • 73% of mothers seek care when children show ARI symptoms (baseline: 35%, NDHS 2013)⁴⁵ 	<ul style="list-style-type: none"> • % of local governments reporting increased reporting of care seeking for ARIs • % of states that have received IEC materials disseminated by FMOH as seed stock • % of states that have run messaging and SBC campaigns featuring pneumonia control • % of LGAs using community structures to follow up with caregivers to drive behaviour change on pneumonia control • % of LGAs using newborn and child health scorecards to drive accountability

⁴⁴ Meaning adoption and/or adaptation

⁴⁵ Does not include those seeking care at PPMVs

Strategy priority	Outcome indicator and target	Output indicators
5. Supply and distribution	90% of patients seeking care are correctly diagnosed and treated and/or referred at each point of care (baseline: 36% received antibiotics and care, NDHS 2013)	<ul style="list-style-type: none"> • Number of local manufacturers of Amox DT with GMP certification • % of states that have adopted the use on Amox DT on the EML • % of states that have completed “product switch campaign” on Amox DT⁴⁶ • % of states with central procurement system for Amox DT • % of states that have engaged private sector suppliers of clean fuel and connected them to businesses and communities • % of health facilities by states that have pulse oximeter and respiratory counter and digital thermometers
6. Service delivery	By 2025, states reach 72% coverage of PCV and Pentavalent, 50% stock availability of Amox DT across, community health workers, PHCs, and PPMVs, and safe delivery of oxygen to 100% of hypoxemia patients (baselines: 33%, WHO 2016; unknown; unknown)	<ul style="list-style-type: none"> • % of states implementing iCCM or similar community-based program (e.g., CHIPS), IMCI, or similar facility-based program / routine immunization programs • % of health training institutions by level/state that have incorporated the strengthen content of pneumonia control into their curriculum (e.g. IMCI) • % of facility-based health workers, by cadre, receiving updated in-service training with strengthened content on pneumonia control (e.g., IMCI) • % of CORPS receiving updated introductory training with strengthened content on pneumonia control (e.g., iCCM) • % of PPMVs that have received training on integrated case management (e.g., iCCM), by state

⁴⁶ Completing a product switch campaign is defined as reach at least 50% of each of the three health systems in the state – primary healthcare, secondary and tertiary healthcare facilities

Annexes

A. Additional detail on implementation plan & costing

S/N	Rec	Activity	Responsible	Level	Interventions	Y1	Y2	Y3	Y4	Y5	Implementation guidance
1.1.1	1.1	Clarify that the CHTWG is coordinating body at federal level for pneumonia control via a presentation of this strategy during the next CHTWG meeting	FMoH	National	All	X					
1.1.2	1.1	Appoint an implementation coordinator within the CHTWG for at least one year to help implement the strategy, track progress, and work with partners to integrate and amplify pneumonia control within their work	FMoH, development partners	National	All	X					Clear job responsibilities should be developed
1.1.3	1.1	Ensure pneumonia control is clearly featured and integrated within other related meetings, conferences, and coordination platforms across health and other sectors (e.g., biannual MNCH week, FMoH iCCM task force, events on clean cooking and nutrition)	Implementation coordinator	National	All	X	X	X	X	X	
1.1.4	1.1	Regularly attend health & other sector professional association conferences to present on and advocate for pneumonia control (e.g., percentage of under-five deaths that stem from pneumonia, first-line treatment)	Implementation coordinator	National	All	X	X	X	X	X	
1.2.1	1.2	Develop an accountability framework for this strategy that clearly defines annual targets, the agent(s) responsible for undertaking key activities, and incentives for states that meet targets to foster transparency and hold key actors accountable	FMoH, NPHCDA, development partners	National	All	X					
1.2.2	1.2	Update and track progress against accountability framework	FMoH, implementation coordinator	National	All		X	X	X	X	

S/N	Rec	Activity	Responsible	Level	Interventions	Y1	Y2	Y3	Y4	Y5	Implementation guidance
1.2.3	1.2	Advocate for creation of broader accountability framework on newborn and child health, and integrate pneumonia control accountability framework into this	FMoH, implementation coordinator	National	All	X	X	X			
1.3.1	1.3	Coordinate with the Ministries of Education, Environment, Women Affairs, Agriculture and Rural Development, Water, and Information by ensuring all Ministries are members of the CHTWG and a representative from each attends every CHTWG meeting	FMoH, implementation coordinator	National	All	X	X	X	X	X	
1.3.2	1.3	Coordinate with other partners outside of the health sector (e.g., clean cooking) to invite them to relevant CHTWG meetings and update them on progress	FMoH, implementation coordinator	National	Clean cooking, other non-health interventions	X	X	X	X	X	
1.4.1	1.4	Clearly designate (and if necessary, create) a state-level coordinating body/platform with an explicit mandate for newborn and child health to coordinate with other Ministries, development partners, and private sector working on pneumonia control at the state level	SMoH, SPHCDA	All states	All	X					
1.4.2	1.4	Appoint an implementation coordinator within the coordinating body/platform to continually ensure pneumonia receives the right level of attention	SMoH, SPHCDA	All states	All	X					
1.5.1	1.5	Host coordination and review meetings at regular intervals between the implementation coordinator and all state-level pneumonia champions to communicate and better align on efforts throughout the year	Implementation coordinator	National	All	X	X	X	X	X	
1.5.2	1.5	Share lessons across states on what is working vs. not via CHTWG meetings	Implementation coordinator, state-level pneumonia champions	National	All	X	X	X	X	X	
1.5.3	1.5	Attend meetings with the implementation coordinator 4-6 times (high-burden states) or 2-3 times (other states) a year	State-level pneumonia champion, SMOH, SPHCDA	All states	All	X	X	X	X	X	

S/N	Rec	Activity	Responsible	Level	Interventions	Y1	Y2	Y3	Y4	Y5	Implementation guidance
2.1.1	2.1	Appoint a pneumonia champion within each state (e.g. prominent personality), to publicly advocate for the strategy and secure government and partner commitments	FMoH	National	All	X					
2.1.2	2.1	Leverage NPHCDA quarterly meetings, Nigeria Governors' Forum, and Legislature Network for Universal Health Coverage to advocate for financial and political support for pneumonia control	FMoH, NPHCDA, development partners	National	All	X	X	X	X	X	
2.1.3	2.1	Engage private sector, civil society, and faith-based organizations to raise awareness about pneumonia burden, gaps in funding and activities, and key interventions (e.g., protection through vaccines, early recognition of symptoms) via meetings and conferences to encourage stronger advocacy to local authorities—focused on subnational governments and local authorities	SMOHs, SPHCDA	All states	All	X	X				
2.2.1	2.2	Enumerate list of policies relevant to pneumonia control across health and other sectors	FMoH	National	All	X					
2.2.2	2.2	Review implementation progress of pneumonia-relevant policies across states and identify gaps	FMoH	National	All	X					
2.2.3	2.2	Engage states with largest implementation gaps to encourage domestication, dissemination, and implementation of the latest policies and guidelines	FMoH, NPHCDA, development partners	National	All	X	X				
2.2.4	2.2	Use accountability framework to drive policy implementation by tracking progress, highlighting gaps, and advocating to SMOHs and SPHCDA to fill them	FMoH, NPHCDA, development partners	National	All		X	X	X	X	See intervention 1.2 in the coordination section for additional details on the accountability framework
2.2.5	2.2	Finalize format for “state-level dashboard”	FMoH, NPHCDA, development partners	National	All	X					See Annex B for an initial draft of the dashboard

S/N	Rec	Activity	Responsible	Level	Interventions	Y1	Y2	Y3	Y4	Y5	Implementation guidance
2.2.6	2.2	Publish and disseminate “state-level dashboard” to all states and development partners bi-annually to report on pneumonia control progress and clearly spotlight/elevate states that are making progress	FMoH, NPHCDA, development partners	National	All		X	X	X	X	See intervention 1.2 in the coordination section for additional details on the accountability framework
2.2.7	2.2	Domesticate and disseminate all pneumonia-relevant policies to relevant actors (e.g., health facilities, LGAs), drawing on professional associations and key opinion leaders (e.g., senior nursing staff)	SMoHs, SPHCDA, professional associations	All states	All	X	X				
2.2.8	2.2	Integrate pneumonia control activities into MOU agreements between states and partners	SMoHs, SPHCDA, development partners	All states	All	X	X	X	X	X	
2.2.9	2.2	Provide additional technical assistance to drive domestication, dissemination, and implementation of all pneumonia-relevant policies	FMoH, development partners	All states	All	X	X				
2.3.1	2.3	Actively coordinate with platforms that provide non-budgetary resources focused on newborn and child health (e.g., GFF, GAVI Health Systems Strengthening) to ensure high-priority pneumonia control activities receive adequate funding	FMoH, NPHCDA, SMoHs, SPHCDA, development partners, implementation coordinator	National	All	X	X	X	X	X	
2.3.2	2.3	Develop a concise investment case for pneumonia control	FMoH, development partners	National	All	X					
2.3.3	2.3	Present the investment case to the Ministry of Finance, Ministry of Budget, and national legislature	FMoH, development partners	National	All	X					
2.3.4	2.3	Engage private sector and philanthropic actors who may be interested in supporting pneumonia control	FMoH, development partners	National	All	X					
2.3.5	2.3	Advocate for greater health spending, overall	Development partners, civil society	All states	All	X					

S/N	Rec	Activity	Responsible	Level	Interventions	Y1	Y2	Y3	Y4	Y5	Implementation guidance
2.3.6	2.3	Present tailored investment case with the health, economic, and political benefits of pneumonia control to State Ministries of Budget/Economic, SMOHs, SPHCDA, state legislatures	Development partners	All states	All	X					
2.3.7	2.3	Work with states to integrate priority pneumonia control activities (e.g., iCCM, IMCI, routine immunization) into budgets, SOML workplans, and health insurance schemes.	Development partners	All states	All	X	X				
3.1.1	3.1	Identify and agree to priority pneumonia-relevant indicators and ensure alignment across data systems	FMoH, NPHCDA, development partners	National	TBC – diagnosis, case management, as well as measurement of overall burden	X					The metrics should be tracked using patients as the unit, not by provider or facility
3.1.2	3.1	Advocate to and collaborate with FMoH to ensure inclusion of pneumonia-relevant indicators in the HMIS and DHS2; these include severity of pneumonia, % of patients with non-severe pneumonia treated with Amox DT, % patients with severe pneumonia treated with first- or second-line antibiotics, and % of hypoxemic patients treated with oxygen	FMoH, NPHCDA, development partners	National	Diagnosis, case management	X					
3.1.3	3.1	Advocate to and collaborate with FMoH to better measure pneumonia burden, distinct from ARIs, via dedicated studies and paediatric death reviews	FMoH, NPHCDA, development partners	National	All	X					
3.2.1	3.2	Expedite rollout of community HIS tools	FMoH, NPHCDA, development partners	All states	All		X	X			
3.2.2	3.2	Train facilities on how to use DHIS2 data to improve quality of care	SMOH, SPHCDA, development partners	All states	All		X	X			

S/N	Rec	Activity	Responsible	Level	Interventions	Y1	Y2	Y3	Y4	Y5	Implementation guidance
4.1.1	4.1	Identify and update, as needed, relevant health promotion IEC materials, (i.e., government materials; materials created by CHAI, UNICEF, USAID, McCann Global Health) for mothers, caregivers, trusted influencers, and communities on how to protect against, prevent, and recognize age appropriate signs and symptoms of newborn and child respiratory illnesses—and on the severity of pneumonia	FMoH	National	All protect, prevent, diagnose interventions	X					Ensure messaging is tailored to key audiences: mothers, other caregivers, trusted influencers (e.g., spouses), and broader communities
4.1.2	4.1	Officially endorse pneumonia control IEC materials	FMoH	National	See above	X					
4.1.3	4.1	Disseminate endorsed IEC materials to states, for further tailoring and dissemination	FMoH	National	See above	X					
4.1.4	4.1	Identify appropriate messaging channels (e.g., religious and traditional leaders, women support groups, radio, workplaces, markets and meeting points, places of worship) based on context—including urban versus rural—to effectively reach each target audience (i.e., mothers, other caregivers, trusted influencers, and other community members)	SMoH	All states	See above		X				
4.1.5	4.1	Conduct user-centred research to understand mother, caregiver, trusted influence, and community knowledge gaps, cultural norms, and behavioural preferences related to pneumonia control	SMoH	All states	See above		X				
4.2.1	4.2	Identify key community structures (e.g., faith-based meetings, traditional institutions, civil society events, community health centres, work place events) and use them to reinforce pneumonia control messaging and drive action amongst mothers and caregivers	SMoH, SPHCDA	All states	See above		X	X			Key contact points across these structures include religious leaders, traditional leaders, civil society, and community health workers, respectively

S/N	Rec	Activity	Responsible	Level	Interventions	Y1	Y2	Y3	Y4	Y5	Implementation guidance
4.2.2	4.2	Identify and engage trusted influencers at the household level (e.g., fathers and mothers-in-law) through dialogue to provide guidance to mothers and caregivers on preventive practices, recognition of danger signs, and appropriate care seeking channels	SMoH, SPHCDA	All states	See above		X	X			
4.2.3	4.2	Use community health workers and trusted influencers to monitor and provide feedback on household pollution levels and other key child development indicators to drive behavioural change; monitoring equipment should be provided to community health workers or village leaders	NPHCDA, development partners	All states	See above		X	X			
4.2.4	4.2	Organise household visits, compound meetings, and community dialogues to drive increased awareness through volunteer community members	Development partners	All states	See above		X	X			
4.2.5	4.2	Undertake additional follow-ups through peer support groups (e.g., mother support groups) to model and promote preventive behaviours (such as exclusive breastfeeding, use of vaccinations, and clean cooking) and care seeking through appropriate points of care (e.g., illustrate such behaviours as the model for responsible parenting)	SMoH, development partners	All states	See above		X	X			
4.2.6	4.2	Use innovative tools such as “talk books” to promote group learning through community health volunteers	Development partners	All states	See above		X	X			
4.3.1	4.3	Define and disseminate health scorecards to drive accountability at the state and community level	FMoH, Development partners	National	All		X	X	X	X	
4.3.2	4.3	Promote women’s empowerment by connecting mothers with existing empowerment programs in their communities	Development partners	All states	All		X	x	x	x	

S/N	Rec	Activity	Responsible	Level	Interventions	Y1	Y2	Y3	Y4	Y5	Implementation guidance
4.3.3	4.3	Promote community ownership and accountability of pneumonia control via community scorecards and “defaulter lists” that target mothers and caregivers to enforce preventive and protective care	SPHCDA	All states	All		X	X	X	X	
5.1.1	5.1	Expand reach of routine immunization and community- and facility-based case management programs (e.g., iCCM, IMCI). <i>See section 3.2.</i>	SMOH, SPHCDA, NPHCDA	All states	Case management, immunization		x	x	x	X	
5.2.1	5.2	Update iCCM training manuals, materials, job aids, and supervision tools to emphasize pneumonia and hypoxemia prevention, diagnosis and treatment protocols	FMoH	National	Diagnosis and case management	X	X				
5.2.2	5.2	Update and disseminate pictorial and graphic messaging showing signs and symptoms, m-health, and an overview of age appropriate treatment protocols for pneumonia and hypoxemia screening in newborn and children	FMoH, Development partners	National	Diagnose and treat		X				
5.2.3	5.2	Increase distribution of Amox DT to both public and private health facilities (<i>see section 3</i>)	SMoH, SPHCDA	All states	Amox DT	x	x	x	x	X	
5.2.4	5.2	Provide toll free telephone hotlines to community workers to support referrals to primary, secondary, and tertiary facilities	SMoH	All states	Diagnose and treat		X				
5.2.5	5.2	Launch a mentorship program at the community level by identifying experienced staff (e.g., Chief Physicians or Chief Nurses) to drive quality improvement of case management of childhood illnesses (SMoH)	SMoH	All states			X	X			
5.3.1	5.3	Develop, update and disseminate job aids and user-friendly care guidelines to orient health workers on pneumonia-specific diagnosis and treatment guidelines including routine hypoxemia screening	FMoH, NPHCDA, SMOH, SPHCDA, professional associations	National and all states		X					

S/N	Rec	Activity	Responsible	Level	Interventions	Y1	Y2	Y3	Y4	Y5	Implementation guidance
5.3.2	5.3	Accelerate the development, endorsement and dissemination of childcare guidelines to health facilities to improve health worker skills	Paediatrics Association of Nigeria, FMoH	National		X					
5.3.3	5.3	Review and update pneumonia components within pre-service curriculum, including IMCI, for facility health workers via medical regulatory bodies periodically, as needed	All Professional associations (Medical and Dental Council, Nursing and Midwifery Council, Community Health Practitioners Board, Pharmaceutical Council of Nigeria)	National	Case management	x		x		x	
5.3.4	5.3	Review and update pneumonia components within in-service trainings, including for IMCI every two years	FMoH	National	Case management	x					
5.3.5	5.3	Develop and disseminate quality of care indicator dashboards to drive quality improvement and track quality of care and service delivery for key childhood illnesses	FMoH	National	Case management		X				
5.3.6	5.3	Support post-training field mentorship and supervision to ensure training implementation by ensuring adequate senior oversight of junior staff	SPHCDA, NPHCDA	All states	Case management		X				
5.3.7	5.3	Develop referral cards with brief patient information to improve referrals among health facilities for states	FMoH, SMOH	All states	Case management		X				
5.3.8	5.3	Select priority hospitals per state to improve oxygen delivery and label them as referral hospitals for hypoxemia management	SMoH, development partners	All states	Case management		X				

S/N	Rec	Activity	Responsible	Level	Interventions	Y1	Y2	Y3	Y4	Y5	Implementation guidance
5.3.9	5.3	Improve supervision of health care workers at the PHC and community levels by launching a program of performance improvement (quarterly basis for health facility levels and monthly for community-health programs)	SMoH, NPHCDA, development partners	All states	Case management		X				
5.4.1	5.4	Engage private clinics to improve and update knowledge on best practices for pneumonia case management and adopt national guidelines on pneumonia management	FMoH, the Association of General and Private Medical Practitioners (AGPMP),	National	Case management	X	x	x	x	x	
5.4.2	5.4	Conduct training activities/peer detailing at private clinics and PPMVs/community pharmacists to build capacity and provide orientation on pneumonia diagnosis and appropriate treatment guidelines, as a part of integrated case management of newborn and childhood illnesses	FMoH, Pharmacist Council of Nigeria, NAPPMED	All states	Case management		X	X			Take into account lessons from CHAI, USAID/MCSP. At beginning, bring relevant actors together to co-design. Map PPMVs in each state. Use monthly NAPPMED meetings for training, mentoring, collecting data, and connecting PPMVs to wholesalers and distributors. After training, present certificate to PPMV to certify; create demand to seek care there via community announcement or introduction ceremony.
6.1.1	6.1	Bulk purchase Amox DT via pooling orders from all health facilities in catchment area and stocking it in States' Central Medical Stores	SMoH	All states	Amox DT	x	X	x	x	x	
6.1.2	6.1	Conduct wholesale activation by sending a representative to popular warehouses to promote Amox DT to PPMVs and pharmacies	SMoH, Development partners	All states	Amox DT		x				
6.1.3	6.1	Scale-up "product switch" substitution communications campaigns from the central level (e.g., internal memos, official letters) towards states and health facilities to recommend Amox DT to treat pneumonia and use of pulse oximeters to diagnose pneumonia	FMoH, Development partners	All states	Amox DT, pulse oximeters		X				

S/N	Rec	Activity	Responsible	Level	Interventions	Y1	Y2	Y3	Y4	Y5	Implementation guidance
6.1.4	6.1	Attend professional association conferences, NAPPMED monthly meetings, etc. to promote Amox DT	Manufacturers	National	Amox DT	x	X	x	x	x	
6.2.1	6.2	Continue to strengthen vaccine supply by reinforcing the NSIPSS strategy to address supply chain and logistics challenges and regularly following up on progress	NPHCDA	National	Immunization	x	X	x	x	x	See strategic priority 1 on coordination, to follow up on NSIPSS progress
6.2.2	6.2	Reinforce and follow up on the Reach Every Ward strategy in line with NPHCDA interventions	NPHCDA	National	Immunization	x	X	x	x	x	See strategic priority 1 on coordination, to follow up on progress
6.2.3	6.2	Reinforce and follow up on the “second year of life” platform to reduce missed immunization opportunities	NPHCDA	National	Immunization	X	X	x	x	x	
6.2.4	6.2	Encourage state governments to create cold chain storage facilities to improve the supply and distribution of vaccines	SMoH	All states	Immunization	X	X				
6.3.1	6.3	Lead demand forecasting efforts to drive development and adoption of multi-modal products for hypoxemia diagnosis and monitoring – ensuring that product development at global level is focused on integrated use cases rather than disease-focused priorities (e.g., pneumonia vs. childhood fever)	Development partners	National	Pulse oximeters, respiratory rate timers	X	X				
6.4.1	6.4	Drive increased availability and affordability of clean cooking fuels via government and private sector engagement	Development partners	National	Clean cooking	x	x	x	x	x	

B. Additional detail on strategic assessment

The following sections provide additional detail on existing efforts related to pneumonia control, key barriers today, and potential opportunities to address them. This analysis derives from stakeholder workshops with 75+ participants, 40+ consultations, and in-depth review of documents and data sources. The strategic priorities and activities recommended in Sections II and III stem directly from these findings.

Pneumonia control across Nigeria

The figure below summarizes pneumonia-related health statistics and coverage of interventions across states. This helps ensure the strategy is tailored based on the differing needs and opportunities at the sub-national level.

Figure 13: Percentage of USs experiencing ARI symptoms

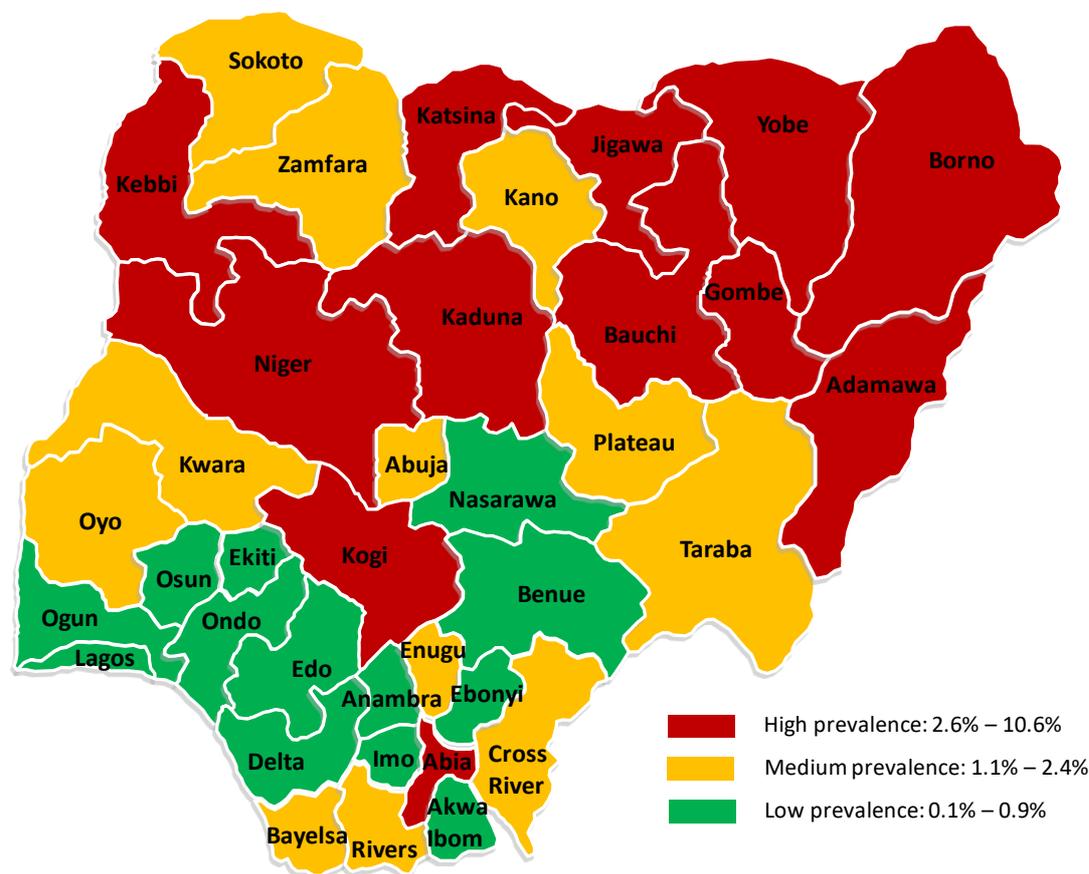


Figure 14: Analysis of states with high U5 mortality and ARI burden

S/N	States	Child health burden: U5 mortality rate (deaths per 1,000 live births)	Score (relative to other states)	Percentage of U5s experiencing ARI symptoms (%)	Score (relative to other states)	Total scores
1	Kebbi	174	32	4	33	65
2	Katsina	135	28	4.3	34	62
3	Jigawa	192	33	2.8	28	61
4	Yobe	102	24	10.6	37	61
5	Niger	149	29	3.3	31	60
6	Zamfara	210	35	2.1	24	59
7	Kano	203	34	2.4	25	59
8	Gombe	162	31	2.8	27	58
9	Bauchi	161	30	2.6	26	56
10	Kaduna	82	17	7.8	36	53
11	Adamawa	84	19	4	32	51
12	Borno	82	16	4.6	35	51
13	Abia	83	18	3.1	30	48
14	Sokoto	119	26	1.8	19	45
15	Bayelsa	95	21	2.1	23	44
16	Taraba	105	25	1.8	18	43
17	Kogi	75	13	3.1	29	42
18	Nasarawa	121	27	0.9	13	40
19	Plateau	80	14	2	22	36
20	Ekiti	86	20	0.9	12	32
21	Imo	96	22	0.8	10	32
22	FCT	71	10	1.9	21	31
23	Oyo	73	12	1.6	17	29
24	Osun	101	23	0.3	4	27
25	Rivers	58	5	1.3	16	21
26	Enugu	-	-	1.8	20	20
27	Cross River	52	3	1.3	15	18
28	Akwa Ibom	73	11	0.4	7	18
29	Benue	82	15	0.1	1	16
30	Ondo	67	9	0.4	6	15
31	Kwara	45	1	1.1	14	15
32	Ebonyi	62	6	0.8	9	15
33	Ogun	66	8	0.4	5	13
34	Edo	-	-	0.8	11	11
35	Delta	63	7	0.2	3	10
36	Lagos	50	2	0.8	8	10
37	Anambra	53	4	0.2	2	6

State-level dashboards

Reducing the burden of pneumonia requires consistent tracking of child health outcomes at the state level. States will need to consistently collect data, and measure performance publicly to effectively encourage progress and healthy competition on improving child health outcomes including pneumonia. Illustrative indicators for the state dashboard include:

- **Newborn and child morbidity and mortality burden**
 - Under-5 mortality rate
 - Under-5 with reported ARI symptoms
 - Under-5 with reported episode of diarrhoea by caregiver in 2-week period
 - Prevalence of malaria among Under-5
- **Protection and prevention**
 - Exclusive breastfeeding of children 0-35 months
 - Prevalence of moderate /severe stunting among Under-5
 - Prevalence of moderate /severe wasting among Under-5

- Under-5 moderately /severely underweight
- PCV coverage rate
- Pentavalent coverage rate
- **Diagnosis and treatment**
 - Pneumonia detection - fast breathing
 - Pneumonia detection - difficult breathing

Stakeholder roles and responsibilities

Figure 6: Actors and responsibilities across the landscape

Level	Partner	Role in ecosystem
Federal	Federal Ministry of Health – including Departments of Family Health, Hospital Services, Public Health, Food and Drug Services, and Health Planning, Research and Statistics	<ul style="list-style-type: none"> ● Responsible for the formulation of policies and guidelines on health in Nigeria, including newborn and child health ● Also plays leading role in coordination, priority setting, financing, and data aggregation and use
	National Primary Healthcare Development Agency	<ul style="list-style-type: none"> ● Responsible for the implementation of primary and community health policies and programs across Nigeria ● Also oversees immunization and the National Emergency Routine Immunization Coordination Centre (NERICC)
	Ministries of Environment, Education, Agriculture, Women Affairs and Social Development, and Budget and Planning	<ul style="list-style-type: none"> ● Responsible for the articulation and coordination of pneumonia related policies—such as nutrition and reducing air pollution through various means including clean cooking—as well as budgeting and work planning for related activities
	Public general and tertiary hospitals	<ul style="list-style-type: none"> ● Responsible for the provision of health services to care seekers based on referrals, for cases requiring advanced case management (e.g. hypoxemia)
	Domestic private sector	<ul style="list-style-type: none"> ● Responsible for the provision of health services, and investments to improve the quality and quantity of health services
	Indigenous manufacturers	<ul style="list-style-type: none"> ● Responsible for the production of medical equipment and commodities, such as Amox DT ● Also plays a role in distribution, by selling products and liaising with other actors in the supply chain (e.g., wholesalers, distributors)
	Development partners	<ul style="list-style-type: none"> ● Supports programs and interventions in line with government priorities including child health
	Professional associations	<ul style="list-style-type: none"> ● Responsible for providing guidance to members on updated treatment guidelines for pneumonia care, helping train healthcare providers, and elevating pneumonia in annual conferences or MCH weeks
	Research institutes	<ul style="list-style-type: none"> ● Responsible for analysing data to inform data-driven decision making
State	SMoHs / SPHCDAAs / HMBs	<ul style="list-style-type: none"> ● Responsible for domesticating and implementing federal health policies at the state level and overseeing and ensuring the delivery of quality care ● Also responsible for state-level coordination (including partners, other Ministries and sectors); budgeting and financing; procurement and distribution of medical commodities (e.g., Amox DT, vaccines); and data collection, aggregation, and use

Level	Partner	Role in ecosystem
	Secondary care facilities	<ul style="list-style-type: none"> Responsible for the provision of health services to care seekers based on referrals from the PHC level
	Distributors	<ul style="list-style-type: none"> Responsible for the delivery of medical commodities such as vaccines and Amox DT
	NGOs and civil society	<ul style="list-style-type: none"> Responsible for the implementation of pneumonia specific programming, advocacy, and promoting civic engagement and social accountability work across identified states
Local	Local governments	<ul style="list-style-type: none"> Responsible for the management and supervision of community health workers, support for community-based programs such as CHIPS and iCCM, and driving civic engagement and social accountability
	Traditional and religious leaders / institutions	<ul style="list-style-type: none"> Serve as leaders in community and can play a role in demand generation / awareness raising as it relates to pneumonia
	PPMVs and pharmacies	<ul style="list-style-type: none"> Responsible for the provision of drugs such as Amox DT for pneumonia treatment at the community level
	Primary healthcare facility health workers	<ul style="list-style-type: none"> Responsible for the provision of health services, and often act as the first point of care within the public health system Also responsible for identifying children who need to be stabilized and referring them to higher levels of care
	Community health workers	<ul style="list-style-type: none"> Responsible for provision of community-based health services (such as iCCM) and promotion of protective and preventive interventions, aligned with and supportive of commitments Nigeria has made to strengthen community health⁴⁷
	Community	<ul style="list-style-type: none"> Responsible for leading and owning community-level pneumonia control efforts—from protection to treatment—via local leadership, community structures, and community health platforms Also responsible for maintaining accountability
	Caregiver and child	<ul style="list-style-type: none"> Protects against and prevents pneumonia, recognizes danger signs, and seeks treatment across various points of care

Mapping of relevant policies and programs

Nigeria has made concerted efforts to reducing neonatal and under-5 morbidity and mortality over the last decade. This strategy builds off these existing efforts. Efforts cut across both system strengthening interventions and specific health challenges. Relevant policies and programs include:

System strengthening

- National Strategic Health Development Plan (NSHDP 2)
- Nigeria Strategy for Routine Immunisation and Primary Health Care Systems Strengthening (NSIPSS)
- National Health Policy
- Nigeria Investment Case

Child health

- Integrated Maternal Newborn and Child Health Strategy
- Nigeria’s Call to Action to Save Newborn Lives
- Nigeria Every Newborn Action Plan

⁴⁷ A delegation from Nigeria attended the Institutionalizing Community Health Conference in 2017 and made commitments to a community health action plan

- National Child Health Policy
- National Child Health Advocacy Policy

Interventions – oxygen and nutrition

- National Strategy for the Scale-up of Medical Oxygen in Health Facilities
- National Policy on Medical Oxygen in Health Facilities
- National Oxygen Access Strategy
- National Plan of Action on Food and Nutrition in Nigeria

Sectors beyond health:

- Sustainable Energy for All Action Agenda

The table below summarizes existing child health, community health, and primary health efforts in Nigeria—and their linkages to pneumonia control. This helps ensure the strategy takes an integrated approach by leveraging existing programming.

Figure 15: Overview of relevant child health programs in Nigeria

Program	Description	Link to pneumonia
Basic Healthcare Provision Fund (BHCPF)	<ul style="list-style-type: none"> • BHCPF is aimed at increasing funds to improve the delivery of primary health care (PHC) services, the Basic Minimum Package of Health Services (BMPHS), and emergency medical treatment • BHCPF derives from the National Health Act (2014), but was launched in 2018 with the roll out of six states: Osun, Abia, Niger, Yobe, Borno, and Edo. So far, 28 states have indicated interest. Once a state meets all readiness criteria, the program would be launched in that state • Funding: the federal government has reserved \$151 million; BMGF has contributed \$2 million, with a \$75million commitment over five years; GFF has committed \$20 million; and DFID is committing \$65 million over the next 5 years. Although states have to express interest with N100 million, states are also encouraged to contribute to the funding • Current health priorities: reproductive, maternal, child, adolescent health plus nutrition, non-communicable diseases screening, and emergency services • Activities funded under BHCPF include: essential drugs and vaccines; maintenance of facilities and equipment, improved human resource for health, essential new born care, etc. 	<p>\$100 million allocated to nationwide scale up of BHCPF:</p> <ul style="list-style-type: none"> • BHCPF has an explicit focus on the coverage of illnesses among U5s: pneumonia, malaria, diarrhea, vaccine preventable diseases – particularly on curative care and immunization. Services include: • Routine immunization – 3 doses of PCV • Intramuscular antibiotics for neonatal pneumonia • Amox DT • Community outreach that would aid in the proper knowledge of prevention and treatment • Nutrition – focus on proper nutrition as a preventive measure • Supply chain model development would ensure vaccines and pneumonia commodities are readily available
Global Financing Facility (GFF)	<ul style="list-style-type: none"> • GFF is a funding solution dedicated to women, children and adolescent health • In Nigeria, GFF funding is focused on the delivery of health services • GFF grant of \$51 million was given to Nigeria in 2018 	<ul style="list-style-type: none"> • \$20 million assigned to MNCH services within the BMPHS (see above for details) • \$20 million assigned to scaling up programs in areas of humanitarian crisis and emergency response via

	<ul style="list-style-type: none"> • The first phase of the GFF grant (2017-2030) will be used to scale up reproductive, maternal, newborn, child, and adolescent health services in areas of humanitarian crisis and emergency response in six states: Yobe, Taraba, Gombe, Borno, Bauchi, and Adamawa • The second phase of the GFF grant (2018) will be used for maternal, newborn, and child health (MNCH) services within BMPHS in Abia, Niger, and Osun state <p>Basic Minimum Package of Health Services (BMPHS)</p> <ul style="list-style-type: none"> • New phase to address stunting and adolescent health • BMPHS is a list of preventive, protective, promotive, curative and rehabilitative health services and interventions that should be available in every health facility • It is published by the Minister of Health • BMPHS consists of nine interventions that focus on maternal health, care for children U5, non-communicable diseases, and emergency treatment of road traffic injuries <p>The aim is for all Nigerians to receive these services completely free</p>	<p>the minimum service package – this includes providing children with all essential vaccines</p> <p>BMPHS includes:</p> <ul style="list-style-type: none"> • Coverage of U5 illnesses – pneumonia, malaria, diarrhea, vaccine preventable diseases- particularly on curative care and immunization • Routine immunization – 3 doses of PCV • Intramuscular antibiotics for neonatal pneumonia • Amox DT
Saving One Million Lives Program for Results (SOML-PforR)	<ul style="list-style-type: none"> • SOML-PforR is a performance-based program that rewards funds to states with the best health outcomes • The program focuses on six pillars of MNCH that can save lives, and two enablers • There are various disbursement linked indicators (DLIs) in which performance is tracked against • The best performing state ‘zonal champion’ in each geopolitical zone receives additional funds • Launched in 2012, SOML-P4R is being financed by a \$500 million IDA credit to Nigeria over 4 years 	<p>A few pillars of SOML can be applied to pneumonia:</p> <ul style="list-style-type: none"> • Scaling up essential medicines and commodities – Amox DT, oxygen • Improving child nutrition • Improving MNCH • Improving routine immunization coverage <p>The two enablers of SOML are:</p> <ul style="list-style-type: none"> • Strengthening logistics and supply chain management • Promoting innovation and tech to improve health services
Drug Revolving Fund (DRF)	<ul style="list-style-type: none"> • DRF is aimed at ensuring the constant supply of essential drugs in PHC facilities • Funding: seed capital is provided by the government, donor agencies or interested parties and is used to purchase the original stock of essential medicines – then the revenues generated from selling drugs to patients is used to purchase new drugs • DRF launched through the Bamako Initiative, which Nigeria started implementing in 1988 • The aim is for all states to roll out DRF 	<ul style="list-style-type: none"> • Essential medicines list – Amox DT, oxygen

<p>Integrated Community Case Management (iCCM)</p>	<ul style="list-style-type: none"> • iCCM is a community-based program that trains community-oriented resource persons (CORPs) in the assessment, classification, treatment, and referral of cases of pneumonia, diarrhea, and malaria in rural communities in hard-to-reach areas • iCCM was created in 2013 • CORPs diagnose and treat children using commodities provided by the Rapid Access Expansion program (acute respiratory infection timers, rapid diagnostic tests, medicines and oral rehydration solution) • iCCM is a donor-supported program - implementation is being supported by WHO, UNICEF, USAID, Malaria Consortium, Society for Family Health, Christian Aid, etc. • iCCM is being implemented in 14 states: Abia, Adamawa, Bauchi, Benue, Jigawa, Kaduna, Kebbi, Niger, Borno, Yobe, Ebonyi, and Kogi – with the aim to roll out to all states 	<ul style="list-style-type: none"> • CORPs are trained on how to diagnose pneumonia (early detection) • CORPs can administer amoxicillin to children U5
<p>Rapid Access Expansion Program (RACe)</p>	<ul style="list-style-type: none"> • RACe was led by the FMOH via the national iCCM task force and operated from 2013 – 2017 in Abia and Niger states • Its aim was to implement and monitor iCCM services in rural communities • Due to RACe, iCCM was incorporated into national policy, and national guidelines, training manuals, data management, service provision, etc. were developed for iCCM • Through treatment of malaria, pneumonia, and diarrhea, RACe saved 2,469 children U5 • RACe was funded by the Canadian government via the WHO Global Malaria Program 	<ul style="list-style-type: none"> • CORPs are trained on how to diagnose pneumonia (early detection) • CORPs can administer amoxicillin to children U5
<p>Integrated Management of Childhood Illnesses (IMCI)</p>	<ul style="list-style-type: none"> • IMCI is an integrated child health approach focused on the well-being of children as a whole • It aims to reduce U5 morbidity and mortality from pneumonia, malaria, diarrhea, measles, and malnutrition • Health workers are trained to conduct holistic assessments of sick children, rapid referrals of severely ill children, and appropriately use medicines in PHC facilities • IMCI also improves the skills and knowledge of community workers • IMCI can be delivered in both an outpatient health facility setting, and in a home setting 	<ul style="list-style-type: none"> • Health workers are trained on how to diagnose pneumonia (early detection) • Health workers can administer Amox DT to children U5 • Household practices: handwashing (protect)

	<ul style="list-style-type: none"> • IMCI was developed by WHO and UNICEF in 1996 	
Essential New-born Care Course (ENCC)	<ul style="list-style-type: none"> • ENCC aims to ensure that health workers have the knowledge and skills to provide high quality care during the childbirth and postnatal period • Nigeria adopted the ENCC package from WHO in 2008; but in 2016, it was harmonized with other packages to produce an integrated package • ENCC includes: exclusive breastfeeding, thermal care, and hygiene practices 	<ul style="list-style-type: none"> • Health workers are trained on how to diagnose pneumonia (early detection) in neonates
Primary Healthcare Under One Roof (PHCUOR)	<ul style="list-style-type: none"> • PHCUOR is a reform aimed at reducing fragmentation in the delivery of PHC services by integrating all sub-national PHC programs and entities under one state-level authority – the State Primary Health Care Development Agency or Board (SPHCDA/B) • However, Local Government Health Authorities are still responsible for implementing primary health care • The philosophy of PHCUOR: one management, one plan, one monitoring and evaluation system • PHCUOR was initiated in 2005 by the National Primary Healthcare Development Agency with support from DFID – however the implementation guidelines only became available in 2013 • Each state is responsible for funding the implementation of PHCUOR • As of 2015, 28 states and the federal capital territory had implemented the majority of the PHCUOR performance domains 	<p>PHCUOR includes the minimum service package:</p> <ul style="list-style-type: none"> • Coverage of U5 illnesses – pneumonia, malaria, diarrhea, vaccine preventable diseases particularly on curative care and immunization: • Routine immunization – 3 doses of PCV • Amox DT
Community Management of Acute Malnutrition (CMAM)	<ul style="list-style-type: none"> • CMAM offers community treatment for severely acute malnourished children • CMAM launched in 2009 in Gombe and Kebbi state, and has been scaled up to an additional 9 states in Northern Nigeria: Sokoto, Zamfara, Katsina, Kano, Jigawa, Bauchi, Yobe, Borno, and Adamawa • CMAM has been included into the DFID-funded Working to Improving Nutrition in Northern Nigeria project and a Children Investment Fund Foundation (CIFF) funded program • In 2016, CIFF gave a grant of \$1.2 million to Bauchi, Gombe and Kaduna to match the funds that the state governments released for the purchase of ready-to-use therapeutic foods 	<ul style="list-style-type: none"> • Scale up of treatment of malnutrition under CMAM

	<ul style="list-style-type: none"> • The CMAM program has admitted over 800,000 children U5 • Over 642 Health Facilities in 91 Local Government Areas (LGA) offer CMAM services free of charge 	
Maternal and Child Health Week (MCHW)	<ul style="list-style-type: none"> • MCHW provides an integrated package of cost-effective maternal and child health services and interventions • The aim of MCHW is to improve access to routine PHC services by mothers and children U5 • It was introduced in 2010, and occurs bi-annually (May and Nov) in all 36 states and the federal territory • MCHW is funded by the state governments (SMoH & SPHCDA) and international development partners: UNICEF, DFID, USAID CIDA, etc. 	<p>Services/interventions offered at MCHW include:</p> <ul style="list-style-type: none"> • Routine immunization • Screening and referral of U5 malnutrition • Vitamin A supplements • Health education on: exclusive breastfeeding, key household practices, handwashing
National Health Insurance Scheme (NHIS)/State Health Insurance Scheme (SHIS)	<ul style="list-style-type: none"> • Launched in 2005, NHIS is aimed at providing affordable access to universal health care via pooled financial prepayments, that reduce financial risk against high health care costs • The federal government sets the standards and guidelines, while enforcing the obligations and protecting the rights of all stakeholders • The programs span across three categories: the formal sector, the informal sector, and vulnerable groups • Depending on the program- the federal, state, or local governments, employers, employees, development partners, and civil society organizations will make prepayments into the program fund • Health Maintenance Organizations act as intermediaries between the NHIS and hospitals that provide health service • Ten states have replicated the NHIS and launched SHIS. These include: Lagos, Delta, Ekiti, Kaduna, Sokoto, Abia, Anambra, Kwara, Kano, and Imo 	<p>The formal and informal sector programs cover subscribers with children under 18. Services include:</p> <ul style="list-style-type: none"> • Routine immunization • Vitamin A supplements • Treatment for ARI and uncomplicated pneumonia • Nutritional advice and health education <p>Most NHIS and SHIS programs also include the above services in their children welfare package</p>

Existing efforts and key barriers

The assessment of relevant efforts & barriers covers demand-side, supply-side, and cross-cutting issues, including: (i) coordination and partnerships, (ii) policy and financing, (iii) data and information systems, (iv) community prevention and care-seeking, (v) service delivery, and (vi) supply and distribution. The sections below summarize key findings for each category. These are the updated versions of the categories discussed at the January 30, 2019 workshop.

1. Coordination and partnerships

Relevant existing efforts: Coordination platforms and frameworks exist that aim to strengthen MNCH efforts across federal and state-level government, partners, and child health programs. For instance, at the federal-level, the **Child Health Technical Working Group (CHTWG)** within the **Core Technical Committee (CTC)** meets 2-3 times a year to coordinate government and partners working on child health issues. Under the CHTWG, an iCCM task force meets regularly to improve the implementation of the iCCM child health program.⁴⁸ The NPHCDA has also created the **National, State and Local Emergency Routine Immunization Coordinating Centres (NERICC/SERICC/LERICC)** to coordinate on how to improve the performance and efficiency of routine immunization. At the state-level, **some states have created coordinating bodies with a specific MNCH mandate**, (e.g., Edo state has a Health Care Implementation Committee, and Bauchi state has a Task Force for Immunization that consists of state and local government actors, development partners and a religious leader).⁴⁹ There are also emerging **accountability frameworks** for primary and child health. For example, the **Saving One Million Lives Payment for Results (SOML PforR)** child health program manual outlines key disbursement-linked indicators which identify the agent(s) responsible for reviewing and verifying data on each indicator.⁵⁰

Barriers: **Pneumonia suffers from two layers of coordination challenges:** those related to coordination of health priorities in general, as well as limited visibility and attention within existing coordination mechanisms. The table below summarizes key issues.

Pneumonia-specific	Limited awareness and visibility	<ul style="list-style-type: none"> • Lack of visibility for pneumonia, as pneumonia has not been prioritized at the state or federal level • Lack of awareness of the severity of pneumonia across policy makers
	Complexity across interventions, sectors, actors	<ul style="list-style-type: none"> • Weak multisector collaboration, including between relevant government actors across the Ministries of Health, Education, Environment, Women Affairs, and Agriculture and Rural Development • 10+ different interventions involved in pneumonia control, which can be harder to manage
Broader health system	Limited coordination among key stakeholders	<ul style="list-style-type: none"> • Weak collaboration between government actors across the Ministries of Health, Education, Environment, Women Affairs, and Agriculture and Rural Development • Implementing partners are not integrated, work in silos, and operate based on different goals, especially at the state level
	Limited integration and collaboration of programs and priorities	<ul style="list-style-type: none"> • Excessive number of coordinating platforms particularly at the state level, which drives information asymmetry • Multiple partners running vertical programs, with independent structures and limited interactions • Varying health priorities across states, which limit federal and state-level coordination, especially if federal policies do not align with state interests
	Limited resources and executory capacity	<ul style="list-style-type: none"> • Lack of human resources to effectively coordinate policies, particularly at the state level. Government departments are understaffed and have limited capacity

⁴⁸ WHO, "Rapid Access Expansion Programme in Nigeria," 2018
Stakeholder interviews, Nov 2018 – February 2019; Dalberg analysis

⁴⁹ Source: Stakeholder interviews, Nov 2018 – February 2019; Dalberg analysis

⁵⁰ World Bank Health, Nutrition, and Population Global Practice, "Program Appraisal Document on a Proposed Credit in the Amount of US\$500 million to the Federal Republic of Nigeria for a Program-for-Results to support the Saving One Million Lives Initiative." 2015; Source: Stakeholder interviews, Nov 2018 – February 2019; Dalberg analysis

		<ul style="list-style-type: none"> • Limited funding for programs limits program implementation and coordination efforts • Lack of an accountability framework makes it difficult to hold key partners accountable to agreed objectives
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2. Policy and financing

Relevant existing efforts: The FMOH has **enacted multiple policies in recent years to reduce child health mortality and morbidity**, with a focus on strengthening primary care and delivering community-based interventions. In addition, the National Treatment Standard Guidelines, National Essential Medicines List, National Essential Equipment List, and National Standing Orders have been revised to recommend use of Amox DT, oxygen, and pulse oximetry. National policy was also updated to allow PPMVs to dispense Amox DT for pediatric pneumonia.

In a similar vein, there are ongoing efforts to **finance the implementation of newborn, child, community, and primary health programs**. These include:

- Statutory processes: The recently-launched Basic Health Care Provision Fund (BHCPF) aims to increase funds to improve the delivery of PHC services, the Basic Minimum Package of Health Services (BMPHS)—including pneumonia care—and emergency medical treatment. The National Health Act requires that 1% of government consolidated revenue fund should be disbursed to health through NHIS (50%), NPHCDA (45%), and FMOH and NCDC (5%).⁵¹ As noted below, development partners have also provided funding to launch the BHCPF, via Nigeria’s GFF investment case.
- National & subnational budgeting processes: The FMOH, NPHCDA, and state governments have resources devoted to newborn and child health (e.g., routine immunization). However, exact amounts remain unknown; the GFF is currently conducting a resource mapping exercise to capture RMNCH spending at national and subnational levels.
- Non-budgeting processes: These include, but are not limited to, the routine immunization MoU between the Bill and Melinda Gates Foundation, the Aliko Dangote Foundation, and six northern states to promote sustainable funding for vaccines and immunization; Global Fund and GAVI Health Systems Strengthening resources; and donor and grant resources allocated to the Nigeria Global Financing Facility Investment Case.
- Insurance: Decentralization of the National Health Insurance Scheme (NHIS) began in 2015, with the goal of expanding coverage and easy demand-side financing challenges. As of 2019, 25+ states have passed legislation to advance decentralized, and state-level insurance schemes are operational in approximately eight states.⁵²

In addition, the Saving One Million Lives Payment for Results Program (SOML PFR), expanded in 2016, disburses performance-based funding to states each year, based on progress against a number of disbursement-linked indicators. This can provide considerable additional resources at state-level to support health programming.⁵³ Recently, the government has also placed additional emphasis on mobilizing private sector financing to support PHC.

Barriers: **Multiple child health and primary care policies exist at the national level but state-level adoption and implementation lags behind and varies greatly from state to state.** In the absence of pneumonia-specific policies, pneumonia morbidity and mortality are less visible resulting in pneumonia control activities being nested within various existing child health programs that do not track and measure performance and impact (e.g., spending, number of cases).

⁵¹ Stakeholder interviews, 2019

⁵² Kano, FCT, Anambra, Oyo, Ogun, Lagos, Delta, Bayelsa. Stakeholder interviews, 2019 and materials from USAID/IHP.

⁵³ For example, Yobe state received USD 29 million in 2018

Overall, funding for health—and primary, newborn, and child health within that—is insufficient. While the BHCPF is a promising development, several stakeholders have noted it may not be enough to finance all primary healthcare. Moreover, financing for newborn and child health is donor-dependent and fragmented. Within this landscape, pneumonia control is often overlooked within integrated budgets (e.g., iCCM programming that does not support pneumonia commodities), and specific financing for pneumonia does not exist—unlike other child health priorities. Lastly, demand-side financing remains a challenge. Currently, state health insurance schemes are operational in eight states.

3. Data and information systems

Relevant existing efforts: There are several types of data collection relevant to pneumonia, including periodic health surveys, routine data collection, and death audits and reviews.

- **Periodic surveys:** Various surveys are conducted and published to monitor and evaluate national, regional, and state performance across several newborn and child health indicators. For example, since 1995 there have been five **Multiple Indicator Cluster Surveys** (MICS) that measure key indicators on the health and development of children and women—which have been used to design policies and programs and to track progress towards the Millennium Development Goals (MDGs), and more recently, the Sustainable Development Goals (SDGs). Other surveys carried out regularly include the **National Demographic Health Survey** (NDHS), the **National Nutrition and Health Survey** (NNHS) via the SMART methodology,⁵⁴ and the **National Immunization Coverage Survey** (NICS).⁵⁵
- **Routine data collection:** Nigeria’s **Health Management Information System (HMIS)** collects routine data to assess the health status of the population; identify major health problems; set priorities at LGA, state and national levels; monitor progress; and share data with decision makers, providers of the data; and the population as a whole. Data is collected via community-based, facility-based, and LGA- and state-based summary forms, which are summarized and entered into the **District Health Information System version 2 (DHIS2)** for data aggregation, indicator analysis, and results tracking.⁵⁶ DHIS2 datasets include: IMCI, U5 mortality, and immunization. Most health facilities still rely on paper-based systems to track data: there are 24 paper forms for health workers to collect information throughout their day. These forms include a child immunization register, children treatment card, and child health card. In an effort to increase utilization of digital tools, the roll out of electronic data capturing using SMS has commenced in some states.⁵⁷
- **Death audits and reviews:** Lastly, the Nigerian Civil Registration and Vital Statistics (CRVS) System and the Maternal and Perinatal Death Surveillance and Response (MPDSR) provide some information on cause of death for newborns and children. While CRVS has a broad scope, MPDSR only captures deaths in the five seven days of life. However, stakeholders noted there are discussions of expanding MPDSR to capture children.

4. Community prevention and care-seeking

Relevant existing efforts: The government and its partners operate various campaigns to raise awareness on healthy lifestyles and vaccinations, which link to pneumonia protection and prevention. For instance, the NPHCDA operates the **National Routine Immunization Program**, which seeks to build

⁵⁴ There are discussions about increasing the frequency of the NNHS. The first survey was conducted Feb-May 2014, the second July-Sept 2015, and the third Feb-Jun 2018. UNICEF, Report on the Nutrition and Health Situation of Nigeria, 2018; accessed at: <https://www.unicef.org/nigeria/reports/national-nutrition-and-health-survey-nnhs-2018>

⁵⁵ The most recent NICS was combined with the MICS

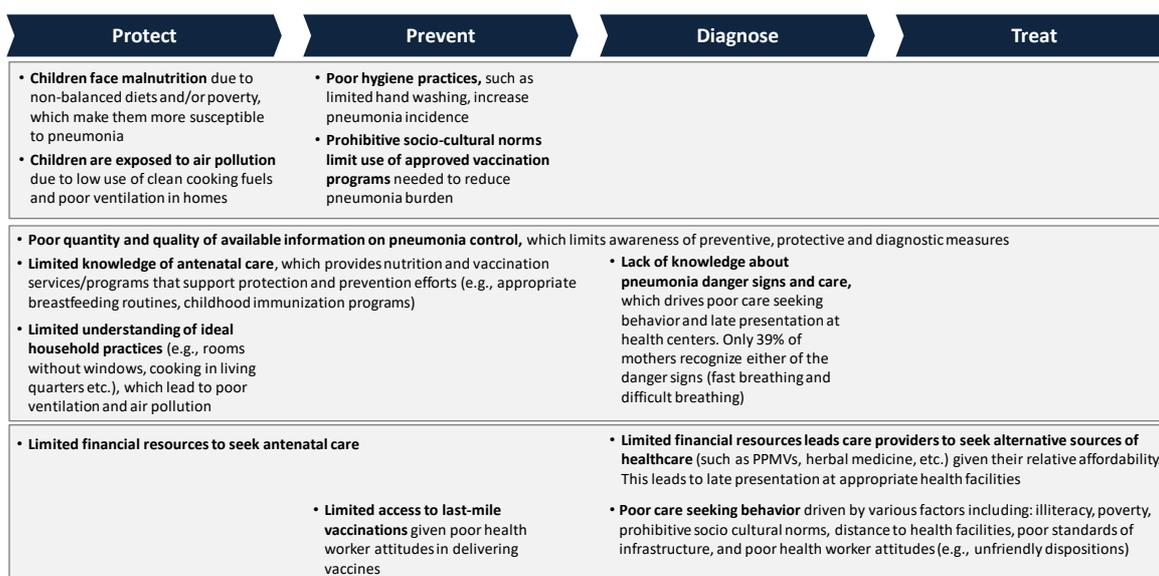
⁵⁶ For instance, monthly data from the HMIS is sent from communities and health facilities to LGAs, who enter the data into DHS2 and send it to the SMOH every quarter; who in turn summarizes and sends data to the FMOH Department of Planning, Research, and Statistics (DPRS) bi-annually.

⁵⁷ Including Nasarawa, Adamawa, Zamfara, and Kebbi

awareness and acceptance of and demand for vaccines for newborns and children; the program includes PCV, Pentavalent (including Hib), and measles. Similarly, the **National and State Emergency Routine Immunization Coordinating Centres** support improved community engagement, amongst broader efforts to manage full implementation of routine immunization strategies and guidelines. NPHCDA is also piloting the **Community Health Influencers, Promoters and Services (CHIPS) program**⁵⁸, where selected individuals in the community are trained on providing community health support, including recognising pneumonia danger signs in young children, and are equipped with Amox DT for treatment. To change behaviours, various partners are using evidence-based tools to encourage people in Nigeria to adopt healthy behaviours using behavioural economics, market insights, and human-centred design to improve programs and support service delivery.⁵⁹ The **BHCPF** also focuses on community engagement where skilled health workers are expected to carry out community outreach often. This can be tailored to increase awareness and prevention.

Barriers: Exposure to risk factors, lack of awareness, and a lack of access to care impede prevention, recognition of danger signs, and care-seeking behaviour. Key risk factors include an exposure to malnutrition, air pollution, and poor hygiene practices. Moreover, care-seekers lack appropriate knowledge and awareness about pneumonia across the patient value chain, driven by a lack of sufficient information and low quality of available information. Beyond this, there are various barriers which limit access to care, including physical distances to health facilities, sub-optimal relationships with some healthcare workers, and a lack of financial resources, as highlighted in the figure below.

Figure 16: Overview of demand-side challenges with pneumonia control



5. Service delivery

Relevant existing efforts: There are a range of existing interventions designed to increase the quality, reach and access to care across both public and private points of care:

- **At the community level**, FMoH and NPHCDA—along with some SMOHs, SPHCDAs, and development partners—have launched community-based child health programs (including

⁵⁸ Program is currently being piloted in Nasarawa State and is expected to roll out nationally eventually.

⁵⁹ One of such programs is Breakthrough Actions, which has a focus on RMNCH+N interventions including breastfeeding and immunizations. Pneumonia can be better integrated into these ongoing awareness and social behaviour change campaigns.

iCCM, CHIPS, NEMCHIC) targeting under-five illnesses.⁶⁰ These programs provide the closest touch points to care seekers and are designed to improve access to care. Additionally, the Community Health Worker Training emphasizes maternal and child health needs, covering the patient spectrum of protection, prevention, diagnosis, and treatment.

- **At the facility level**, the government has undertaken administrative efforts to improve service delivery through initiatives such as the Primary Healthcare Under One Roof (PHCUOR), which integrates all primary healthcare services under one system. Also, the WHO has supported Nigerian efforts in implementing emergency triage and treatment, to improve the quality of care and attention to care seekers. The BHCPF also scores and reviews health facilities on areas that affect service delivery. Funds are also disbursed to facilities to help improve service delivery.
- **Across the private sector**, there are also efforts to improve access to quality treatment. For example, and the Federal Ministry of Health published new guidelines allowing PPMVs to sell Amox DT.⁶¹

Finally, to improve access to quality of care across all points, the Paediatric Association of Nigeria (PAN) is in the process of developing guidelines on treatment of childhood illnesses including pneumonia. The National Health Insurance Scheme has funding for under-five children through the Basic Healthcare Provision Fund (BHCPF), which covers the treatment of child illnesses at the primary-care level, whose implementation will exceed the lifespan of this strategy.

Barriers: **There is a lack of quality preventive and curative care for pneumonia across facilities, communities, and PPMVs.** Many of these challenges relate to insufficient knowledge and skills of health workers due to:

- Inadequate training to effectively diagnose (e.g., recognising danger signs) and treat pneumonia for community health workers, facility-based workers, and PPMVs
- Inadequate field mentorship to supplement classroom training, which is crucial to guide the application of classroom skills in patient care
- Limited connection between incentives received from training and patient outcomes. Incentives from training (such as certificates and monetary allowances) are not tied with health worker care outcomes, therefore reducing staff incentives to implement training in patient care
- Poor dissemination of detailed treatment guidelines. Healthcare workers often lack the appropriate support material such as detailed treatment guidelines to adequately diagnose and treat pneumonia

Capacity is also an issue: health workers are inundated by heavy workloads, given that primary healthcare facilities are often understaffed. This limits health worker's ability to provide quality care to patients.

6. Supply and distribution

Relevant existing efforts: The Federal Ministry of Health has launched several national policies to facilitate the scale up coverage and strengthen the supply chain for pneumonia-control commodities, including Amox DT and oxygen-related commodities. These include the second edition of the **Nigeria Standard Treatment Guidelines** (NSTG) in 2017 (recommending the use of Amox DT for pneumonia), the sixth edition of the **National Essential Medicines List** (EML) in 2016 (which includes Amox DT and oxygen), the **National Strategy for the Scale-up of Medical Oxygen in health facilities** (FMoH 2017-2022) and the **National Essential Equipment List** (EEL) which includes pulse oximeters. FMoH also

⁶⁰ iCCM, IMCI, and CHIPS are not nationally implemented across Nigeria. Currently 14 states have implemented iCCM and is dependent on donor funding for sustainability. CHIPS is currently being piloted in Nasarawa State, with impending rollout in additional states in 2019.

⁶¹ PPMVs are trained by their national association – NAPPMED, in collaboration with the Pharmaceutical Council of Nigeria

operates the National Product Supply Chain Program, which implements the National Supply Chain Integration Project, responsible for coordinating all logistics issues across the delivery value chain. Also, the NPHCDA has articulated various strategies such as the ORIS (Optimised Routine Immunization Sections), and the Reach Every Ward Strategy, to improve the circulation of vaccines to last-mile populations. Finally, in 2018, the NPHCDA released the **Nigeria Strategy for Routine Immunisation and Primary Health Care Systems Strengthening (NSIPSS)**, a 10-year strategy designed to increase access and improve equitable coverage for routine immunization, and strengthen the PHC system across the country, which is currently being implemented.

Barriers: Supply and distribution of commodities and products needed for pneumonia control remains a challenge, particularly at the last mile. There are challenges across various supply chains:

- For health commodities like Amox DT, the procurement process can be cumbersome due to bureaucracy at the state-level. Ordering is fragmented due to multiplicity of channels (SMOH, donors), and distribution logistics are challenging due to long distances and bad infrastructure. There is also a lack of quality data on procurement and purchasing. Quality is also an issue: there are many products on the market and weakly-recognized seals of approval from NAFDAC, NDLA and SON.
- For vaccines, reaching the last mile remains a challenge (e.g., lack of cold chain).
- Outside health, there is a need to strengthen the availability and affordability of clean cooking fuels (e.g., LPG, ethanol, methanol) and associated cookstoves.

Product scale-up analysis

Key pneumonia-control commodities span the patient care continuum from protection to prevention to diagnosis to treatment. The figure below maps out key products. There are also emerging innovations around lung ultrasound and digital auscultation for improved diagnosis, mainly to help distinguish between bacterial vs. viral pneumonia.

Figure 17: Key products for pneumonia control



Coverage of many of these products—including Amox DT, pulse oximeters, rapid respiratory timers and oxygen—remains low due a combination of cross-cutting, demand-side, and supply-side challenges. Lack of awareness of key commodities and knowledge of best practices and guidelines

contribute to low demand from health workers and care seekers and result in low access, misuse, and underuse of key commodities. On the other hand, high costs, high-number of suppliers, limited product visibility, weak quality assurance mechanisms, and limited availability of operational and maintenances services for complex machinery result in stock-outs of commodities or unavailability of products. The figures below provide a high-level summary of scale-up challenges for key products, using the USAID *Ready, Set, Launch* guide.⁶²

Figure 18: Analysis of Amox DT scale-up

	 POLICY & FINANCING	 COORDINATION	 EVIDENCE & REGULATION	 MANUF. & DISTRIBUTION	 MARKET & USER
BARRIERS	<ul style="list-style-type: none"> State-level implementation of enabling policies varies Lack of guidelines implementation from FMOH and SMOH 	<ul style="list-style-type: none"> No explicit coordination around scale-up efforts 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Other amoxicillin-derived products are supplied instead of Amox DT, pointing to need for substitution efforts Manufacturers lack GMP certification 	<ul style="list-style-type: none"> Lack of demand prevents reliable production & distribution Lack of marketing and product visibility
LANDSCAPE	<ul style="list-style-type: none"> Revision of national policies to recommend use of Amox DT (National Essential Medicines List) Addition of Amox DT to the the Drug Revolving Fund in all states 	<ul style="list-style-type: none"> CHTWG oversees newborn and child health issues 	<ul style="list-style-type: none"> Daily Needs' Amox DT product has met NAFDAC and USP quality testing specifications 	<ul style="list-style-type: none"> Seven companies produce Amox DT in Nigeria Emzor only produces on demand 	<ul style="list-style-type: none"> Demand projections for Amox DT are increasing

Level of challenge ■ Low ■ Medium ■ High

Figure 19: Analysis of pulse oximetry and medical oxygen scale-up

	 POLICY & FINANCING	 COORDINATION	 EVIDENCE & REGULATION	 MANUF. & DISTRIBUTION	 MARKET & USER
BARRIERS	<ul style="list-style-type: none"> Pulse oximeters and oxygen are expensive Lower cost pulse oximeters are emerging, but some questions around quality remains 	<ul style="list-style-type: none"> Some coordination efforts exist 	<ul style="list-style-type: none"> Lack of quality assurance mechanisms to ensure products have met national safety and quality standards 	<ul style="list-style-type: none"> Oxygen supply requires multiple and special equipment Fragmentation of product supply given high number of private suppliers of pulse oximeters and oxygen 	<ul style="list-style-type: none"> Lack of biomedical engineers and technicians to maintain and repair oxygen equipment Lack of knowledge of from health care workers to diagnose and treat hypoxemia
LANDSCAPE		<ul style="list-style-type: none"> United4Oxygen has been launched and strives to coordinate all activities Oxygen Help Desk also launched 		<ul style="list-style-type: none"> There are a number of pulse oximeters available 	<ul style="list-style-type: none"> Reliance on clinical signs to detect hypoxemia CHAI study has revealed that only 1 in 10 children with hypoxemia actually receive requisite oxygen therapy

⁶² For more information, see <https://www.usaid.gov/cii/ready-set-launch>

Figure 20: Analysis of respiratory rate timer (RRT) scale-up

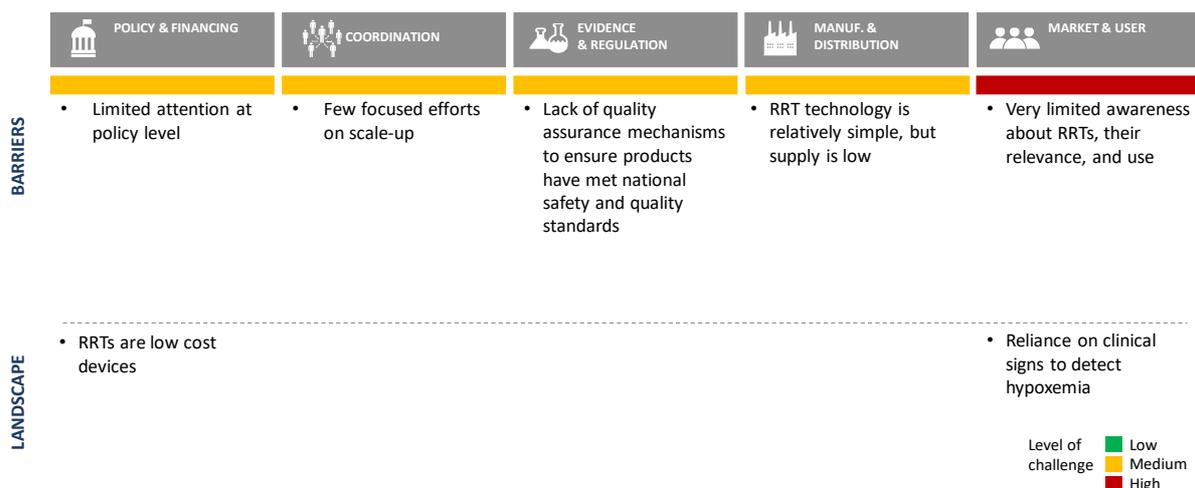
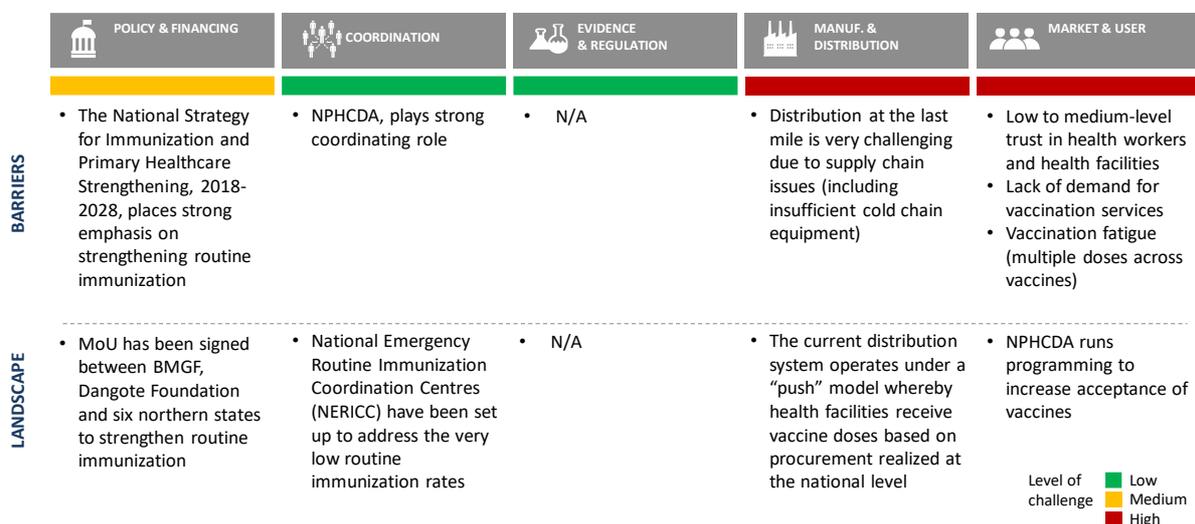


Figure 21: Analysis of vaccine scale-up, including PCV, Pentavalent, measles



C. List of consultations

In addition to the one-on-one consultations below, 75+ participants attended the first stakeholder workshop on Jan 30, 2019 to discuss barriers and opportunities for integrated pneumonia control. 20 participants also attended a review of the draft strategy on April 4, 2019.

Organization	Name	Title
Government		
Bauchi State Drugs Mgmt & Medical Consumable Agency	Abdulkadir Ahmed	Managing Director
Cross River SMOH	Patience Ogar Uke	Director of Public Health and State Epidemiologist
Edo SPHCDA	Iwuwahen Mbarie	Executive Secretary
FMOH	Dr. Adebimpe Adebisi, mni	Director, Family Health Department
	Dr. Abosede Adeniran	Director, Child Health Division
	Tinu Taylor	Deputy Director, Child Survival
	Dr. Oluseyi Omokore	SMO Child Survival
NPHCDA	Dr. Nneka Onwu	Director, Community Health Services

	Dr. Oladimeji Olayinka	Director, Primary Health Care Systems
	Chris Elemuwa	Head of Division, Health Services
	Dr. Jibril Yahya	AD, Community Health Services
	Dr. Nana Sandah-Abubakar	Program Manager, CHIPS
	Dr. Uniovo Efe-Aluta	NERICC
Development partners		
Bill and Melinda Gates Foundation	Lee Pyne-Mercier	Senior Program Officer
CHAI	Kate Schroder	Vice President of the Essential Medicines
	Chizoba Fashanu	Deputy Director
	Felix Lam	Senior Manager
	Martha Gartley	Technical Advisor, Oxygen Access
	Amina Ja'afar	Associate, SRMNCH
Save the Children	Dr. Adamu Isah	Chief of Party
	Innocent Ifedilichukwu	Advocacy Coordinator
UNICEF	Dr. Emmanuel Emedo	Child Health Specialist
	Dr. Garba Safiyanu	MNCH Health Specialist
USAID	Vathani Amirthanayagam	RMNCH Health Team Lead
	Yakubu Cherima	Senior Maternal & Child Health Program Manager
	Uwem Inyang	Program Manager
	Pavani Ram	Senior Medical Advisor
	Patricia Jodrey	Child Health Team Leader
	Nikki Tyler	Senior Market Access Advisor
	Rachel Fowler	Program Analyst
	Foyeke Oyedokun-Adebagbo	Program Manager
	Elizabeth Noonan	Immunization Advisor
	Omer Imtiazuddin	Senior Innovative Finance Advisor
	Helen Petach	Senior MCH Science Advisor
	Nazo Kureshy	CSHGP Team Lead
	Nefra Faltas	Child Health Advisor
DfID	Dr. Ebere Anyachukwu	Health Specialist
IVAC	Chizoba Wonodi	Country Director
	Chisom Jeff-Obi	Management Consultant
Oxygen4Life	Adegoke Falade	President
	Ayobami Adebayo Bakare	Project Manager and Vice President
Global Financing Facility	Umma Yaradua	GFF Liaison Officer
WHO	Joy Ufere	National Professional Officer on Child, Adolescent and Nutrition Health
Private sector		
Daily Needs	Ngozi Osuji	Head of Quality Operations
	Sola Adeyi	General Manager
Emzor	Gbenga	Brand Manager – Tropical Infectives
	Ikemefuna Obiorah	National Key Accounts Manager
Masimo	Grant Aaron	Chief of Health
	Koby Asamoah	Business Development Manager, Africa
Philips	George Uduku	Nigeria Country Director
	Niels Buning	Venture Manager Healthcare, Strategy & New Business Development for Africa

	Andrew Omidvar	Vice President of Enterprise and Government R&D
LAMP Africa	Egorp Emmanuel	Chief Executive Officer
Others		
Lagos University Teaching Hospital	Dr. Chinyere Ezeaka	Head of Neonatology-Perinatology Unit
Project Gaia	Harry Stokes	Founder
	Joe Obueh	Director, and Household Energy Specialist
	Chido Munangagwa	Business Analyst
USP	Mopa Esuga	GMP Specialist
West African Academy of Public Health	Henry Okwuonu	Program Coordinator

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