

Strengthening Disaster Preparedness and Emergency Response: Competency and Utilization of Community Health Practitioners at the Primary Health Care Level in Nigeria

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Abstract:

➤ *Background:*

Nigeria faces recurrent infectious disease outbreaks, climate-related hazards, flooding, conflict-related displacement and other public health emergencies. Community Health Practitioners (CHPs) including Junior Community Health Extension Workers (JCHEWs), Community Health Extension Workers (CHEWs) and Community Health Officers (CHOs) operate close to communities and therefore occupy an important position in early detection, risk communication, basic emergency care, referral and continuity of essential primary health care (PHC). The submitted evidence indicates a persistent mismatch between routine service competence and emergency-specific readiness.

➤ *Objective:*

To critically examine disaster preparedness and emergency-response competencies of CHPs at PHC level in Nigeria, identify system-level barriers to their utilization, and propose an evidence-informed, PHC-centred framework for strengthening emergency readiness and resilience.

➤ *Methods:*

A narrative review was undertaken using the evidence and policy sources contained in the submitted manuscript, supplemented by verification against current WHO, UNDRR and Nigerian institutional sources. The synthesis follows four analytical domains: workforce competency, institutional readiness, enabling resources and governance/coordination. Reported empirical percentages are treated as findings of their original studies rather than as a pooled national estimate.

➤ *Results:*

Evidence from Rivers State indicates high routine maternal/preventive-care competency (84.2%) but substantially lower reported competency in acute infection triage (41.7%) and rapid epidemiological reporting/tracking (31.5%). The same study reported PPE deficiencies among 87.5% of CHEWs and absence of in-service simulation laboratory training among 93.3%. In a Kano study of 359 multisectoral stakeholders, 44.3% of epidemic preparedness and response committees and 41.8% of rapid response teams were judged functional; only 29.2% reported prior formal RRT training in outbreak investigation and response. These findings are consistent with international evidence that preparedness is multidimensional and depends on training, systems, supplies, coordination and community engagement rather than individual knowledge alone.

➤ *Conclusion:*

CHP emergency readiness should be institutionalized rather than treated as an episodic training activity. The 2026 WHO Emergency Ready Primary Health Care (ERPHC) Framework provides a timely architecture around four capacities; connect, detect, protect and treat, which can be operationalized through competency-based curricula, simulation, routine surveillance, pre-positioned supplies, referral protocols, RRT integration, supportive supervision and measurable quality-improvement indicators (World Health Organization [WHO] & Resolve to Save Lives, 2026).

Keywords: Disaster Preparedness; Emergency Response; Community Health Practitioners; Primary Health Care; Health-System Resilience; Nigeria; Health Security; Community Health Workers.

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I. INTRODUCTION

➤ Background and Problem Statement

Public health emergencies increasingly occur at the intersection of infectious hazards, climate variability, environmental degradation, population mobility, conflict and health-system fragility. The Sendai Framework identifies understanding risk, strengthening risk governance, investing in resilience, and enhancing preparedness for effective response as mutually reinforcing priorities (United Nations Office for Disaster Risk Reduction [UNDRR], 2015). WHO similarly emphasizes that emergency preparedness must be connected to routine health-system functions rather than maintained as a parallel activity (WHO, 2024a, 2026a).

For Nigeria, the emergency-preparedness challenge is especially important at PHC level because frontline facilities and community-based workers frequently encounter health threats before specialized response teams arrive. Nigeria's National Action Plan for Health Security (NAPHS) was designed to strengthen prevention, detection and response to public health threats through a multisectoral approach (Nigeria Centre for Disease Control [NCDC], 2018). The country's subsequent health-security assessments have continued to identify capacity gaps requiring sustained system strengthening (NCDC, 2023).

The submitted manuscript appropriately identifies a central paradox: CHPs may perform routine maternal, preventive and community-health functions effectively while having fewer opportunities to rehearse emergency-specific skills. This distinction matters because disaster competence is not simply an extension of routine competence; it requires rapid recognition, prioritization, communication, coordination, safe care, referral and adaptation under resource constraints (Almukhlifi et al., 2025; WHO & International Committee of the Red Cross [ICRC], 2018).

➤ Community Health Practitioners as an emergency-readiness asset

WHO guidance recommends that community health workers be integrated into health systems through appropriate education, deployment, supervision, management and support rather than treated as a detached programme workforce (WHO, 2018). In Nigeria, CHPs occupy a comparable community-facing position within PHC. Their proximity to households can support event detection, community listening, risk communication, contact tracing or referral, health education, continuity of essential services and linkage to higher levels of care, provided these functions are defined within scope, supported by supervision and connected to formal response systems.

The 2026 EPRHC Framework strengthens this argument by organizing PHC emergency readiness around

four capacities: connect, detect, protect and treat. The framework is explicitly designed to embed emergency preparedness, response and resilience within everyday PHC operations (WHO & Resolve to Save Lives, 2026).

➤ Aim and objectives

This review aims to synthesize evidence on CHP preparedness and utilization in emergency response in Nigeria and to translate the evidence into an implementable PHC-level framework.

- Examine reported emergency-response competency gaps among CHPs.
- Assess institutional and operational barriers that limit CHP utilization.
- Map Nigerian policy and programmatic structures against contemporary international preparedness frameworks.
- Propose a competency-based, simulation-supported and system-enabled model for CHP emergency readiness.
- Identify measurable indicators for implementation, monitoring and future research.

II. METHODS

This is a narrative review and policy synthesis. The starting evidence base was the submitted manuscript, which identified empirical studies, Nigerian policy documents, programmatic reports and international frameworks. Additional verification was conducted against current WHO and UNDRR sources and the indexed bibliographic record for the Nigerian studies cited in the manuscript. The review is not a systematic review, meta-analysis or primary field study; consequently, the percentages reported below should not be interpreted as nationally representative estimates.

The analytical framework grouped evidence into four domains: (1) individual and team competency; (2) institutional preparedness; (3) operational resources and infrastructure; and (4) governance, coordination and community interface. This approach is consistent with contemporary health emergency frameworks that treat preparedness as a system property rather than a single workforce attribute (WHO, 2023a, 2026b).

III. RESULTS AND ANALYTICAL SYNTHESIS

➤ Competency Profile: Routine Proficiency Versus Emergency Readiness

The Rivers State study included 120 practicing CHEWs and reported routine maternal and preventive-care proficiency of 84.2%, compared with 41.7% competency in acute infection triage and 31.5% in rapid epidemiological data reporting/tracking (Azubike et al., 2026). The pattern is analytically important because it suggests that emergency readiness may lag behind routine service delivery even within the same workforce.

The gap should not be interpreted solely as a deficit in individual performance. The same study reported deficient PPE supplies for 87.5% of respondents and absence of in-service simulation laboratory training for 93.3% (Azubike et

al., 2026). Thus, observed competence is likely shaped by an interaction between knowledge, opportunity to practise, equipment availability, supervision, organizational expectations and exposure to emergency scenarios.

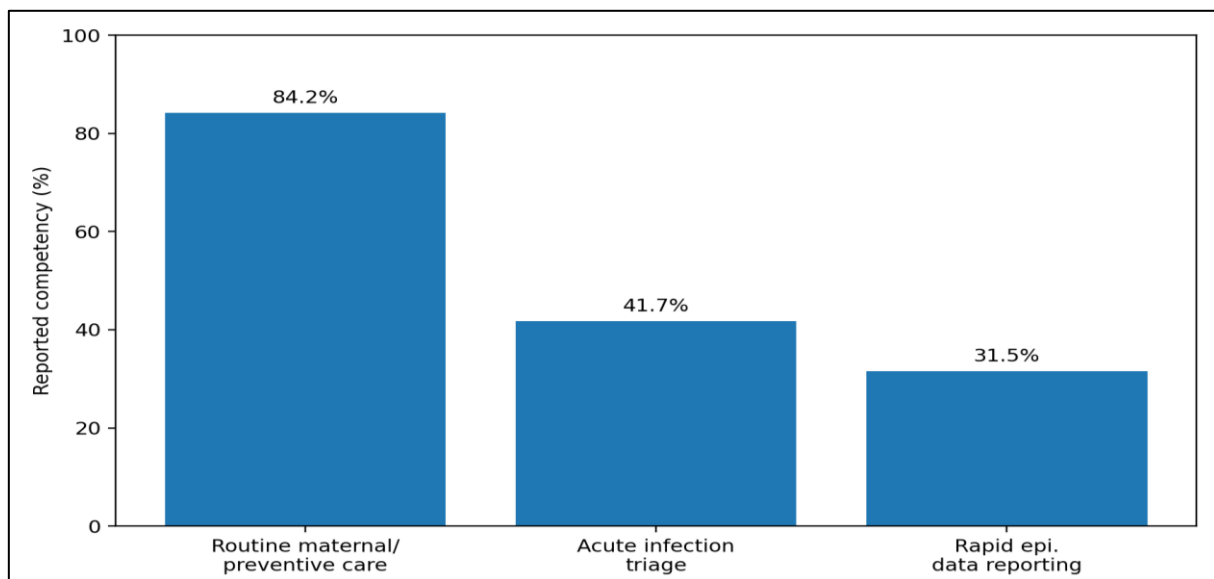


Fig 1 Reported Competency Profile Among Frontline CHEWS

- *Note. Percentages are reported by Azubike et al. (2026) and are not national estimates.*

➤ *Institutional Preparedness And RRT Functionality*

Danzomo et al. (2025) surveyed 359 stakeholders across health, agriculture and environment sectors in Kano State. Only 44.3% of epidemic preparedness and response committees and 41.8% of rapid response teams met the study's functionality criteria. At the operational level, 37.3% reported a functional epidemic preparedness and response plan, 23.4% reported an adequate dedicated preparedness budget, 35.4% reported that all health facilities were equipped to detect and report epidemic-prone diseases, and

41.5% reported a fully functional coordination mechanism. Only 29.2% reported prior formal RRT training in outbreak investigation and response, while 58.2% reported that refresher training was not regular.

These findings reveal a preparedness chain in which weaknesses can accumulate: an adequately trained CHP cannot compensate for absent reporting channels; an RRT cannot function optimally without supplies and transport; and a facility-level response cannot be sustained without coordination and financing. The analytical implication is that workforce development must be paired with organizational readiness.

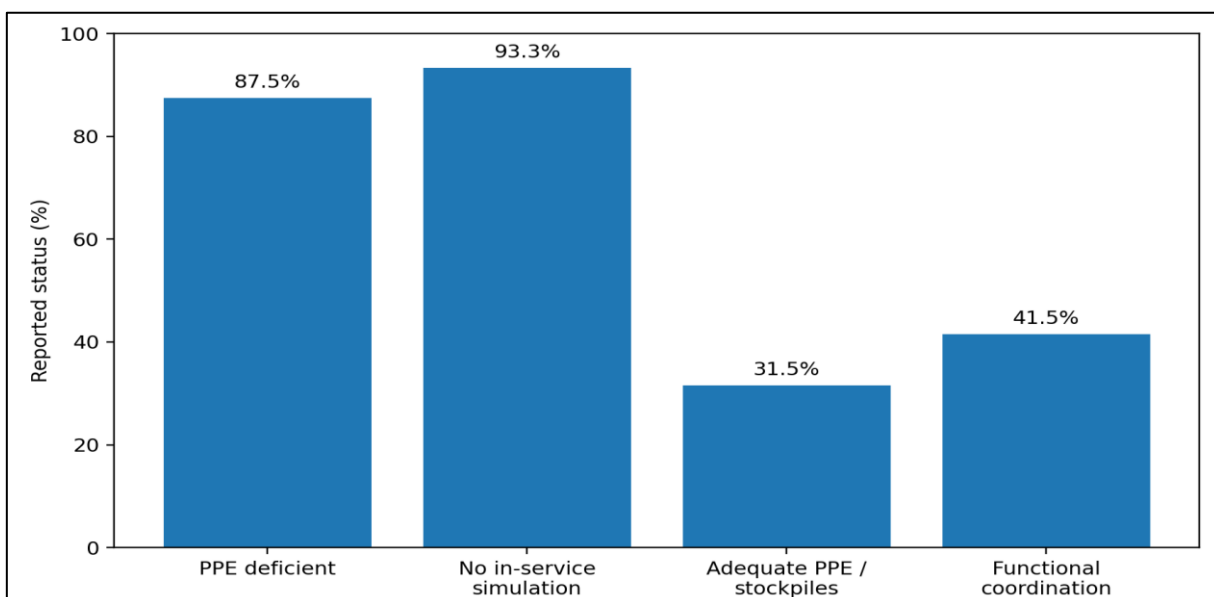


Fig 2 Selected Operational and Institutional Readiness Indicators

- *Note. Indicators are drawn from Azubike et al. (2026) and Danzomo et al. (2025); denominators and study populations differ and therefore the indicators should not be treated as a single composite score.*

➤ Climate and Flood-Related Preparedness

Ngwu et al. (2025) reported high awareness of several flood-associated conditions among healthcare workers in Bayelsa State, including malaria (95.6%), cholera (98.1%) and typhoid fever (95.6%). However, awareness was less comprehensive for other flood-associated conditions. The study also reported that 92.4% of respondents considered themselves completely or partially prepared and identified a strong association between awareness and preparedness (OR = 12.04; 95% CI [5.19, 27.94]; $p < .001$).

The practical interpretation is not that awareness alone creates preparedness. Rather, awareness can be a proximal competency that must be converted into action through plans, drills, equipment, referral pathways and locally relevant risk communication. This aligns with the Sendai emphasis on risk knowledge and the ERPHC emphasis on embedding readiness in routine PHC.

➤ Training and Simulation as Preparedness Infrastructure

WHO/ICRC Basic Emergency Care (BEC) provides a transferable model for first-contact providers: systematic assessment, prioritization and initial management of time-sensitive illness and injury (WHO & ICRC, 2018). Its emphasis on practical scenarios and structured approaches supports a competency-based CHP curriculum. Likewise, WHO's Psychological First Aid resources emphasize humane, practical and culturally respectful support following crisis events (WHO, 2011, 2013).

For Nigerian CHP education, simulation should therefore extend beyond clinical procedures. A mature programme should include outbreak notification, triage, PPE donning and doffing, referral communication, mass-casualty prioritization, flood response, community risk communication, psychological first aid, safeguarding of vulnerable groups and after-action review. Objective

➤ Proposed ERPHC-Aligned CHP Preparedness Model

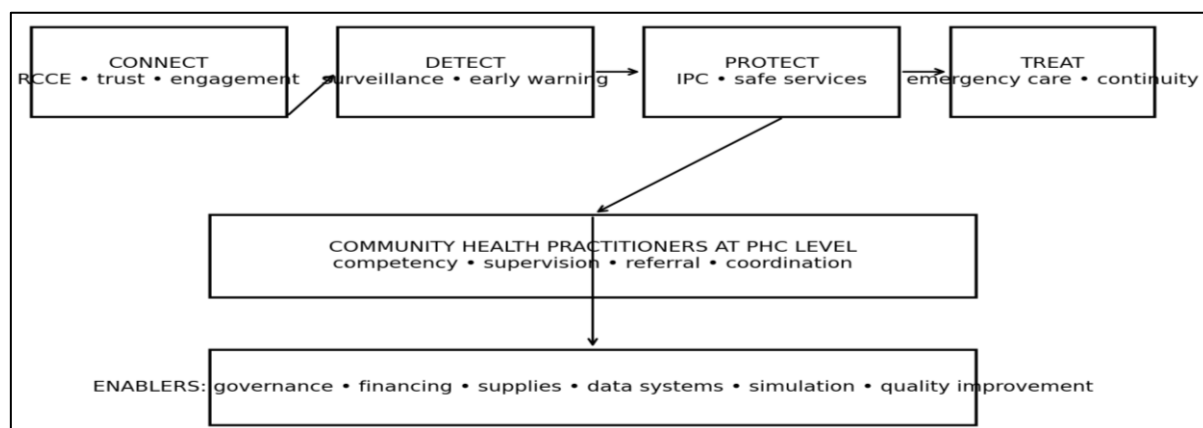


Fig 3 Proposed Model for Translating the ERPHC Capacities into CHP Education, Deployment and PHC Quality-Improvement Systems.

Structured Clinical Examination (OSCE) stations can assess discrete skills, while simulation drills can assess team performance and systems integration.

➤ Risk Communication and Community Engagement

Emergency preparedness is weakened when technical response systems are disconnected from community trust. WHO identifies risk communication and community engagement (RCCE) as core emergency capacities and has developed a competency framework to support standardized training and professional development (WHO, 2024b). For CHPs, this is particularly relevant because their routine work involves repeated interaction with households and community structures.

The implication for Nigeria is that RCCE should not be reserved for national outbreak communication units. PHC teams should have predefined communication roles, community-feedback channels, rumor-management procedures and locally adapted messages. This can improve early reporting and adherence while reducing misinformation and distrust.

➤ Policy Alignment

Nigeria's NAPHS established a multisectoral architecture for health security, while the 2026 WHO ERPHC Framework now offers a PHC-specific operational logic. The latter's four capacities—connect, detect, protect and treat—can be mapped directly to CHP functions. Connect corresponds to community engagement and risk communication; detect to surveillance and early warning; protect to infection prevention and safe service delivery; and treat to emergency care, referral and continuity of essential services (WHO & Resolve to Save Lives, 2026).

The model also complements the WHO Health Emergency Preparedness and Response capabilities framework, which emphasizes coordination, workforce development, surveillance and intelligence, risk communication, clinical guidance and financing among other capabilities (WHO & International Association of National Public Health Institutes [IANPHI], 2026).

The proposed model positions CHPs at the interface between community protection and facility response. The four capacities should be operationalized through competency standards, supervision, simulation, supplies, digital reporting and referral coordination. Importantly, the model does not imply that CHPs should replace professional

cadres or specialist emergency teams; rather, it assigns them defined functions appropriate to their training and scope of practice.

➤ *Recommended Competency Framework*

Table 1 Recommended Competency Framework

ERPHC capacity/domain	Core CHP competency	Suggested assessment	Illustrative indicator
Connect	RCCE, community listening, rumor management, vulnerable-group communication	Scenario-based communication; OSCE; community drill	Proportion passing RCCE competency assessment
Detect	Syndromic recognition, alert thresholds, case definitions, rapid reporting	Case simulation; electronic reporting exercise	Timeliness/completeness of alerts
Protect	IPC, PPE, environmental safety, continuity planning	PPE drill; facility IPC simulation	PPE competency pass rate; IPC audit score
Treat	ABCDE assessment, basic emergency care, first aid, stabilization and referral	BEC-aligned simulation; OSCE	Emergency competency pass rate
Coordinate	RRT interface, referral, handover, incident communication	Multi-agency tabletop exercise	Referral completeness and response-time indicators
Recover	Psychological first aid, continuity of essential services, after-action review	Post-event simulation/debrief	Completed after-action reviews and corrective actions

IV. DISCUSSION

The evidence supports three linked propositions. First, emergency preparedness is a competency problem, but not only a competency problem. The Rivers findings show large gaps in emergency-specific skills alongside major deficits in PPE and simulation. Second, preparedness is organizational: the Kano study shows that committee and RRT functionality depends on structures, training, supplies and coordination. Third, PHC offers an underused platform for preparedness because community-facing workers can connect population-level risk information with facility-level response.

The international literature reinforces this systems interpretation. An integrative review of emergency healthcare-worker preparedness found substantial variation in preparedness measures and generally inadequate or moderate preparedness across many settings, particularly in lower-resource environments (Almukhlifi et al., 2025). WHO's CHW guidance similarly stresses that education

alone is insufficient without appropriate deployment, supervision, integration and system support (WHO, 2018).

Nigeria therefore needs a shift from episodic emergency training toward a preparedness lifecycle: risk assessment → competency development → simulation → deployment → supervision → real-event response → after-action review → corrective action → reassessment. Such a cycle would make preparedness measurable and continuous.

A further analytical issue is equity. Emergencies often produce disproportionate effects among children, older people, pregnant women, persons with disabilities, displaced populations and socially marginalized groups. PHC preparedness should therefore include explicit safeguarding, referral and communication measures for vulnerable populations rather than assuming that generic preparedness benefits all groups equally. This is consistent with WHO's community-protection approach, which places affected communities and equity at the centre of health emergency readiness (WHO, 2024c).

V. SUMMARY OF KEY FINDINGS

Table 2 Summary of Key Findings

Finding	Evidence	Interpretation
Routine vs emergency competency gap	84.2% routine proficiency vs 41.7% triage and 31.5% rapid reporting	Emergency competence requires dedicated curricula, practice and assessment.
Training infrastructure deficit	93.3% reported no in-service simulation laboratory training	Simulation should be institutionalized, not occasional.
PPE/resource gap	87.5% reported deficient PPE	Competency cannot be separated from operational readiness.
Preparedness governance	44.3% EPRCs and 41.8% RRTs functional	Preparedness requires functional structures, not

gap	in Kano	merely committees on paper.
RRT training gap	29.2% reported prior formal outbreak-investigation training	Regular RRT/PHC joint exercises are required.
Community interface gap	25.3% rated community engagement effective in Kano	RCCE should be embedded within routine CHP functions.

VI. RECOMMENDATIONS

- Establish a national CHP emergency competency standard. CHPRBN and relevant PHC/training authorities should define minimum competencies for JCHEWs, CHEWs and CHOs across connect, detect, protect, treat, coordinate and recover domains, with clear scope of practice boundaries.
- Embed emergency preparedness throughout pre-service education. Emergency content should be longitudinal, with OSCEs, case-based learning and simulation rather than a single end of programme module.
- Institutionalize simulation and drills. Each CHP training institution and PHC cluster should conduct periodic tabletop, clinical and community response exercises, followed by documented after action reviews.
- Create an integrated PHC emergency readiness scorecard. Facilities should be assessed on plans, surveillance, RCCE, IPC, referral, essential supplies, staffing, power/water continuity and drill performance.
- Integrate CHPs into RRT and incident-management structures. Roles should be defined in SOPs so that CHPs contribute to community detection, contact/interface functions, RCCE, basic stabilization and referral without exceeding competence or scope.
- Strengthen supply-chain resilience. Minimum emergency stocks of PPE, essential medicines, diagnostic materials, communication equipment and referral supplies should be defined and monitored.
- Digitize community-to-facility alerts. Routine surveillance platforms should permit rapid, simple reporting from PHC and community interfaces, with feedback to the reporting worker.
- Make RCCE a core CHP competency. Training should include community listening, rumor management, culturally appropriate communication and two-way feedback.
- Protect vulnerable populations. Preparedness plans should specify mechanisms for identifying and referring children, pregnant women, older persons, persons with disabilities and displaced populations.
- Link preparedness to financing and quality improvement. Emergency readiness should have explicit budget lines and be incorporated into routine PHC quality-improvement cycles.
- Build a national research agenda. Future studies should use multicentre designs across geopolitical zones and measure competence objectively through OSCEs and simulation, not self-report alone.
- Evaluate implementation scientifically. Pilot the ERPHC-aligned CHP model using pre/post competency measures, facility readiness indicators, response-time metrics and qualitative implementation outcomes.

VII. IMPLICATIONS FOR INTERNATIONAL HEALTH SYSTEMS

Although the review is Nigeria-focused, the proposed model has broader relevance to low- and middle-income settings where community-based health workers form a substantial component of the PHC workforce. The central lesson is transferable: community-level emergency readiness is strongest when workforce competencies, institutional systems, supplies, data, referral pathways and community engagement are designed as one operational system. The ERPHC framework provides a useful common language for that integration (WHO & Resolve to Save Lives, 2026).

The Nigerian case also illustrates the importance of translating global preparedness frameworks into nationally regulated professional education. International standards are most useful when translated into assessable competencies, local SOPs, simulation scenarios and facility-level indicators. This creates a bridge between global health security commitments and everyday PHC practice.

VIII. LIMITATIONS

This paper is a narrative review and does not estimate pooled effect sizes. The empirical studies cited are geographically and methodologically heterogeneous, and the Rivers and Kano findings cannot be generalized to all Nigerian CHPs or PHC facilities without further multicentre research. Some programme and institutional reports are descriptive rather than peer-reviewed. In addition, the original manuscript included a 2019 Global Health Security Index score; because the Index is an external benchmarking tool rather than a direct measurement of CHP preparedness, it is used here only as historical context and not as a current national preparedness estimate. Finally, reported competency percentages are retained as source findings and should be checked against the final published versions of the original articles during journal submission.

IX. CONCLUSION

Community Health Practitioners are strategically positioned to strengthen emergency readiness at the PHC-community interface in Nigeria. The evidence reviewed demonstrates that routine service proficiency does not automatically translate into emergency competence and that workforce capability is constrained by institutional readiness, supplies, simulation opportunities, coordination and financing.

The 2026 ERPHC Framework provides a timely organizing architecture. By translating connect, detect, protect and treat into regulated CHP competencies, simulation-based education, PHC preparedness scorecards,

RRT integration, digital surveillance, RCCE and continuous quality improvement, Nigeria can move from episodic emergency training toward a sustained preparedness lifecycle. The priority is not simply to train more CHPs, but to build a PHC system in which trained CHPs can reliably act, communicate, refer and protect communities when emergencies occur.

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