



Introduction Phase of PACK Nigeria in Bauchi State: Implementation, Monitoring, and Outcomes

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Abstract

This study explores the initial implementation of the Practical Approach to Care Kit (PACK) Nigeria programme in Bauchi State. Designed to strengthen clinical decision-making and improve the quality of primary healthcare, the intervention employed a structured cascade training model, complemented by facility-based mentoring and supportive supervision. Standardized monitoring and evaluation frameworks were integrated to ensure consistency and track progress. The report highlights early experiences and outcomes, including measurable improvements in healthcare workers' knowledge, increased confidence in applying PACK guidelines, and enhanced adherence to evidence-based practices. It also identifies operational lessons such as the importance of contextual adaptation, stakeholder involvement, and sustained supervisory support in maintaining implementation fidelity. These findings provide valuable insights for policymakers and practitioners seeking to expand PACK Nigeria to other regions, offering practical guidance for scaling health system strengthening initiatives in resource-constrained settings.

Keywords: PACK Nigeria; primary healthcare; cascade training; supportive supervision; clinical decision-making; implementation fidelity; health system strengthening; Bauchi State; mentoring; monitoring and evaluation; scale-up strategies

Introduction

The Practical Approach to Care Kit (PACK) is a comprehensive clinical decision-support approach localised for Nigeria to help standardise first-contact primary care across cadres. PACK combines a concise guide with mentored, case-based training and facility-level supervision, addressing variability in decision-making and quality. This paper describes the programme logic, implementation approach, and observed outcomes from the Introduction Phase in Bauchi State, focusing on knowledge change, guideline use, and system interfaces.

Methods Setting and Governance

The programme was implemented through collaboration between state health agencies and technical partners. Governance included oversight of training quality, supervision, supply chain coordination, and clinical governance. Stakeholder engagement at state and local levels was used to reinforce ownership and resolve bottlenecks as they arose.

Facilities and Participants

Twenty primary healthcare centres (PHCs) across Bauchi State participated. In total, 169 clinicians engaged in the training cascade: Community Health Extension Workers (CHEWs), Junior CHEWs, Community Health Officers (CHOs), nurses, and midwives. The staffing mix reflects the workforce composition typical of Nigerian PHC and underscores the importance of task-sharing and decision support.

Intervention: Cascade Training Model

The PACK cascade model trained Master Trainers (MTs), who then trained Facility Trainers (FTs). FTs provided structured, step-down sessions in each PHC using PACK Nigeria materials. Sessions emphasised guide navigation, locally profiled clinical cases, and iterative practice with feedback. Facility teams cultivated a community of practice to normalise guideline use during consultations.

Supportive Supervision, Mentoring, Monitoring, and Evaluation

Supportive supervision and mentoring accompanied training to ensure application at point of care. Monitoring and evaluation (M&E) included attendance records, pre-post knowledge tests (15 items across women's health,



communicable and non-communicable diseases, and child health), a brief experience survey, observation checklists, and patient-experience sampling. A structured M&E checklist enabled triangulation between self-report, observation, and training records.

Ethical Considerations and Data Quality

Participation in assessments and feedback activities was voluntary and focused on quality improvement. Individual results were anonymised in supervision summaries, and facility-level dashboards avoided personally identifiable information. Data quality was supported through standardised instruments, verification of key fields, and routine triangulation.

Results

Coverage, Attendance, and Completion

All selected PHCs initiated step-down activities. Attendance remained high across sessions, and most clinicians completed the full sequence of PACK cases, supporting exposure to the breadth of the guide.

Baseline Guideline Use and Confidence

At baseline, most clinicians reported frequent guideline use; however, many also indicated uncertainty about medication selection while expressing confidence in referral decisions. This pattern aligns with known gaps in therapeutic decision-making at PHC level.

Knowledge Outcomes

Among paired respondents, mean clinical knowledge improved from 4.7/15 to 7.2/15, representing a relative gain of approximately 54%. Facility-level variation was observed, consistent with differences in readiness, staffing mix, and supervision intensity.

Patient-Experience Snapshot

Patient-experience sampling indicated perceived improvements in communication, consultation structure, and service organisation. These early signals were used by facility teams to guide micro-improvements during supervision.

Discussion

The programme's effects should be interpreted through an implementation lens. Improvements in knowledge and reported guideline use emerged alongside supportive supervision and facility-level mentoring. The following sub-sections combine performance of effect, quality and adaptation, system interfaces, equity considerations, and implications for policy and practice.

Interpretation of Knowledge Gains

The observed knowledge gains reflect exposure to PACK's structured, case-based teaching method and opportunities to apply guidance during routine consultations. PACK reduces cognitive load by converting diffuse guidelines into navigable decision flows while reinforcing rehearsal at point of care. Similar improvements have been documented when PACK is implemented with mentoring support, suggesting that knowledge change accompanies practice change when supervision persists.

Mechanisms of Effect

Three mechanisms credibly underpin the improvements. First, guide navigation supports rapid, standardised decisions across cadres. Second, the cascade model builds a community of practice inside facilities, enabling peer learning and accountability. Third, supportive supervision targets barriers skills, confidence, documentation, and patient flow in real time, accelerating adoption and reducing drift.

Implementation and Adaptation

Quality was promoted through standard session plans, role clarity for MTs and FTs, and an observation-anchored M&E checklist. Concurrently, teams adapted micro-workflows (e.g., triage and documentation) to local realities, balancing standardisation with context. This balance is critical for complex primary-care interventions to "fit" while preserving their core components.

Health System Interfaces

Clinical upskilling requires enabling inputs—essential medicines, diagnostics, and clear referral lines. Engagement with state leadership and agencies helped address bottlenecks identified during supervision visits. Aligning procurement lists with PACK recommendations and embedding indicators into routine dashboards can institutionalise gains.

Patient Experience and Trust

Improvements in communication and consultation structure strengthen trust at first contact and may encourage earlier care-seeking. Incorporating quick patient-experience sampling into supervision creates a feedback loop that complements clinical indicators and supports team-based quality improvement.

Equity, Gender, and Access

Because PACK equips non-physician clinicians who constitute the majority of the PHC workforce, it advances equitable access to competent care. Intentional emphasis on respectful maternity care, adolescent-friendly services, and gender-sensitive communication within training reinforces inclusion and mitigates barriers for underserved groups.

Sustainability, Scale-Up, and Cost

Sustainability depends on integrating PACK milestones into routine supervisory tools, budgeting periodic refreshers, and protecting in-facility learning time. Cascade training is cost-efficient by leveraging internal trainers; however, periodic quality assurance is needed to prevent dilution. The SSMM&E checklist can serve as the backbone of ongoing assurance.

Policy and Practice Implications

Policy makers can consolidate gains by aligning human-resource policies with task-sharing norms, linking PACK indicators to LGA and state dashboards, and ensuring supply chains reflect the medicines and diagnostics prioritised in the guide. Managers can use short case audits and direct observation to translate knowledge gains into measurable practice changes.

Limitations

This analysis relies on descriptive monitoring data. Without a comparison group, causal inference is limited. Knowledge tests capture only one dimension of performance. Facility selection (one PHC per LGA) may not represent all PHCs, and variation in staffing and readiness likely influenced outcomes.

Conclusion

The Introduction Phase strengthened clinical decision-making and primary care quality through a mentored, case-based training cascade with supportive supervision. Institutionalising PACK within routine supervision, supply planning, and performance dashboards offers a feasible path to sustain and scale gains.

Table 1

Participating Primary Health Care Facilities by Local Government Area (LGA)

LGA	Facility
Ganjuwa	Soro PHC
Darazo	AIY Under Five PHC
Misau	Misau Town PHC
Dambam	Dambam PHC
Gamawa	Gamawa PHC
Katagum	Bulkachuwa MPHC
Zaki	Katagum PHC
Itas Gadau	Gadau PHC
Jama'are	Dogon Jeji PHC
Giade	Isawa PHC
Bogoro	Boi PHC
Tafawa Balewa	Lere PHC
Alkaleri	Gar PHC
Dass	Town Maternity
Bauchi	Tashan Babe PHC
Toro	Jamaa'a PHC
Shira	Disina PHC North
Kirfi	Bara PHC
Warji	Dagu PHC

Ningi	Gadar Maiwa PHC
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Note. One primary health care facility per LGA participated in the Introduction Phase.

Table 2

Clinical Decision-Making Test Performance (Paired Sample, n = 115)

Measure	Mean Score (Max = 15)	Percentage
Pre-training	4.7	31%
Post-training	7.2	48%
Relative improvement	—	54%

Note. Post-training averages include only clinicians who completed both pre- and post-tests.

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