

IDENTIFYING & ADDRESSING LOGISTICAL BARRIERS TO PCV INTRODUCTION IN NIGERIA

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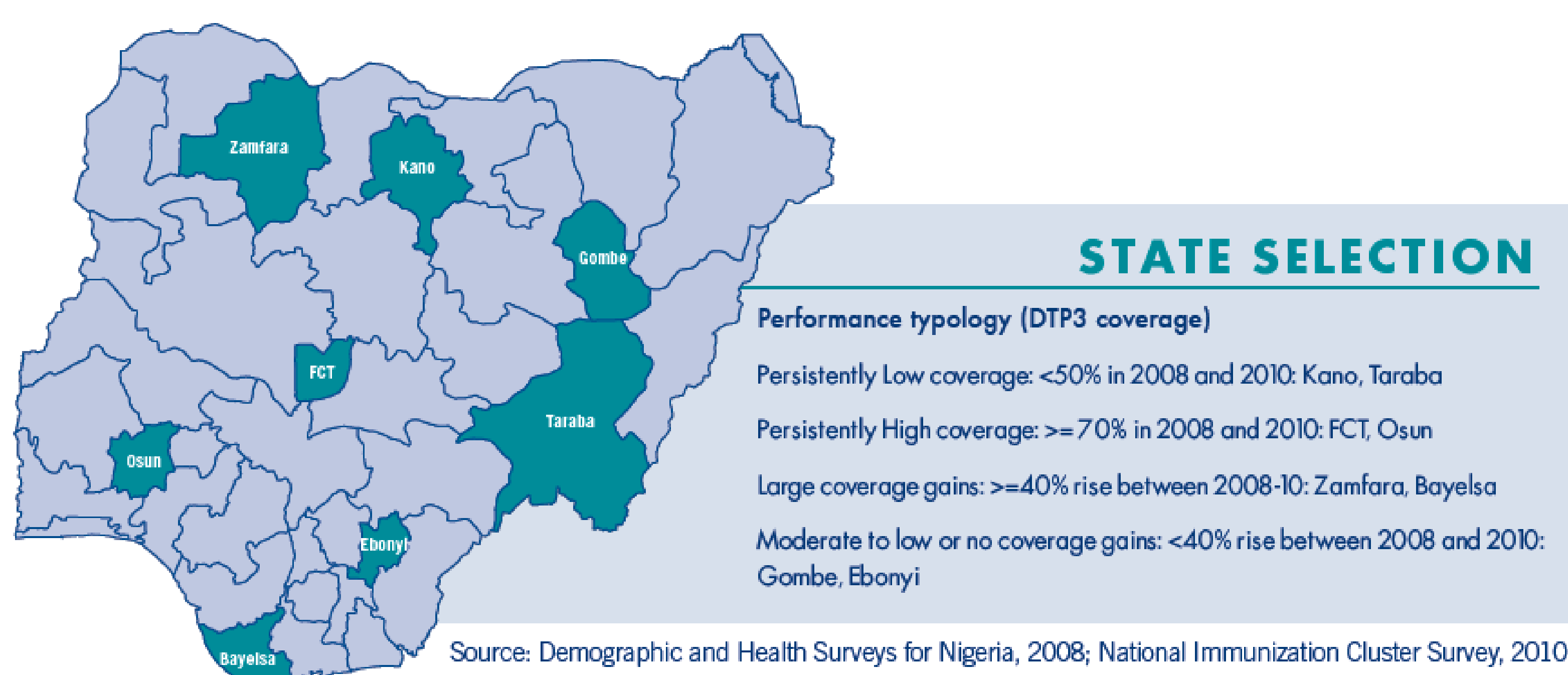
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INTRODUCTION

Nigeria has the highest pneumococcal disease burden in Africa, with over 80,000 child deaths per year. This high mortality occurs against a backdrop of low routine immunization (RI) coverage; Nigeria's estimated RI coverage rate of 67% is below regional averages and global coverage targets. **Nigeria plans to introduce PCV in April of 2013, but introducing PCV into a low-performing or sub-optimal system may result in wastage, shortage, or other unintended consequences.** It is therefore important to identify and address existing logistical barriers relevant to PCV introduction.

METHODS

This **qualitative analysis of logistical barriers to routine immunization** was based on a series of in-depth interviews, focus groups, and facility observations across Nigeria. Interviews took place across 8 Nigerian states to ensure geographic and sociocultural diversity, as well as a diversity in RI performance. Respondents identified perceived barriers to routine immunization coverage, as well as potential solutions.



Informational interviews were conducted at three levels:

- **Key Informant Interviews** with officials, mid-level managers, health care providers, NGOs, and other influencers at the national, state, LGA and community levels (126 interviews)
- **Facility and community-based Focus Group Discussions** with men's and women's groups (11 focus groups)
- **Facility-based participant observation and exit interviews** to determine core issues facing RI utilization, uptake and demand (14 facilities)

We hypothesized that barriers would vary between high- and low performing states, and that characterizing those variations would explain the heterogeneity of immunization coverage rates and guide policy-makers towards high-impact interventions.

To that end, this landscape analysis employs qualitative methods to elucidate key themes. Further research with a representative sample may allow for quantitative assessment of the issues identified here. However, the diversity of geographical representation and representation throughout varying levels of government allows for some preliminary evaluation of state-level and government issues. The recurrence of key themes across states and levels provides further verification of the relevance and usefulness of this approach.

TABLE 1. Characteristics of Selected States.

State	Trend DTP3 coverage (%) 2008 to 2010	Population (2008) in millions	No of LGAs	% of women with no schooling (DHS 2008)
Kano	8 → 26	10	44	65.7
Taraba	20 → 16	2.4	16	46.9
FCT	76 → 87	1.7	6	15.4
Osun	86 → 86	3.7	30	12.8
Zamfara	9 → 64	3.5	14	87.9
Bayelsa	28 → 73	1.8	8	10.4
Gombe	28 → 65	2.5	11	64.6
Ebonyi	60 → 89	2.3	13	25

RESULTS

In contrast to our hypothesis, the barriers listed were surprisingly homogenous across study sites, though the relative priority of each was not statistically assessed. For example, **cold chain capacity and transport issues were mentioned in every state and at each government level:** in each state between 31% and 57% of respondents cited logistic difficulties as a barrier. The proportion was lower in higher performing states, but quantitative comparisons should be made with caution given the non-representative nature of the study. Specific logistical issues relevant to PCV introduction include the following:

Inadequate transport for vaccines and health workers. While transport from the national cold store to state cold stores is relatively consistent, local and facility level informants in multiple states noted breakdowns along the supply chain from state cold stores to facilities and communities.

- Facilities located far from local government cold stores or on inadequate access roads are unable to collect vaccines regularly without reliable transportation.
- In low-coverage areas where vaccination is accomplished partly by outreach efforts rather than solely at PHCs, health workers must rely on personal transportation in order to reach families in their homes.
- Even the relatively small and dense FCT reported transportation difficulties; while the impact is magnified in rural areas, it is not solely a rural problem.

Inadequate cold chain capacity. Across the country, lack of established mechanisms for repair and maintenance of cold chain equipment can lead to frequent breakdowns and disruption of the cold chain system, particularly at LGA and health facility levels.

- Only one of the eight states (Kano) had a system for maintaining cold chain equipment, put in place by a donor-funded project.
- In facilities with inadequate storage, unused vaccines must be returned at the end of the day to avoid wastage; in rural areas the journey to and from the cold store may take most of the day, reducing client service hours.
- Inconsistent power supply interferes with cold chain capacity; solar equipment is common but often non-functional due to lack of maintenance.

CONCLUSIONS

Our findings suggest that logistical barriers remain highly relevant to immunization in Nigeria. Logistical interventions alone will not bring Nigeria in line with coverage targets. However, logistical barriers are concrete and nearly ubiquitous, providing a practically and politically feasible platform for high-impact intervention.

- With transport difficulties cited in all eight states, **transportation and equipment maintenance contracts** offer good potential for context-appropriate services that can be managed at scale.
- Provision of **additional cold storage through fridges or satellite units** could alleviate cold chain issues and associated transportation difficulties in some areas, allowing for advance planning and storage of multiple days' worth of vaccine.
- In remote and riverine communities that rely on outreach efforts rather than in-facility services, **provision of a PHC vehicle or boat** could improve access to services. Vehicle provision programs will require careful supervision to ensure maintenance and prevent misuse.
- Leadership at the state or local level can mitigate or amplify the impact of logistical barriers; **targeted political advocacy** will remain an important tool in the effort to increase RI coverage.

Without improvements in logistics, PCV introduction may be hampered by the same barriers currently facing RI. Interventions such as transportation contracts and cold chain maintenance could therefore be effective capacity builders to prepare for a successful PCV introduction.