# A Participatory Action Research for health system bottleneck analyses in a Prevention of Maternal to Child Transmission of HIV programme in Nigeria

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**Background:** Participatory Action Research (PAR) is an approach to research that enables action through a reflective cycle whereby participants collect and analyse data in real world contexts and determine actions to be taken. It blurs the line between researchers and research subjects by empowering programme implementers become partner researchers as against being objects of research (respondents). This paper describes the use of PAR in identifying health system bottlenecks in PMTCT programme in two Nigerian Local Government Areas (LGAs) in 2016. Nigeria accounts for about 30% MTCT globally.

**Methods:** Using PAR, we supported programme managers in both LGAs to conduct bottleneck analysis (BNA) on PMTCT interventions using a modified Tanahashi model. The model measures six determinants of “effective coverage” of “tracer” interventions: Availability of essential health commodities and human resources; accessibility, acceptability, continuous utilization, and impact/quality of interventions delivered. Bottlenecks are identified as gaps to optimal coverage of each determinant. Tracer interventions include: HIV Testing and Counselling, ARVs for PMTCT, and Infant HIV Testing.

Programme managers were supported to identify constraints using routine data analysed on a MS-Excel based BNA tool. Techniques like brain storming, “5 Whys”, affinity and driver diagrams, were used to perform root cause analysis.

**Results:** We found that effective coverage across all tracer interventions was very poor. This was largely due to poor demand for services as well as poor geographical distribution of intervention facilities. Generally, health facilities providing PMTCT services had relatively good supply of commodities and trained human resources to deliver services. On the demand side, there was more acceptability and continuity of T&C services by women attending ANC when compared to other interventions. Despite availability of commodities and human resources, 39% and 100% HIV positive pregnant women were not receiving ARVs in both LGAs respectively. Contrary to policy and programme guidelines, 78-100% of HIV-exposed children did not have blood samples taken for PCR tests within two months of birth. Further, 82-100% of HIV-exposed children whose blood samples were taken for PCR test within two months were positive, indicating high vertical transmission rates. Action plans were developed by the managers to address and follow-up on these bottlenecks. Detailed findings are presented tables and figures.

**Conclusions:** Our study demonstrates that BNA using a PAR approach is effective in identifying health systems constraints. Thus, it may be very helpful in aiding local health managers address programme constraints quickly, within the confines of available resources.