Quality of management and treatment services for sick children at patent and proprietary medicine vendors (PPMVs) in two states in Nigeria

Abimbola Olayemi, Kate Giroy, Felix Ogaga, Chinwe Nweze, Miranda Gyangyang, Emily Stammer, Michel Pacque

Background
• Patent and Proprietary Medicine Vendors (PPMVs) are an important source of treatment for sick children in Nigeria. Concerns are widespread that PPMVs provide poor quality services, although evidence is limited.

• The Maternal and Child Survival Program (MCSP), in close coordination with public and private state and national-level stakeholders, is working to improve and assess the quality of integrated community case management (iCCM) services for childhood malaria, diarrhea and pneumonia that PPMVs provide. This approach, entitled “Enhancing Quality iCCM through PPMVs and Partnerships (EQuiPP),” supports 542 PPMVs registered with the Pharmaceutical Council of Nigeria (PCN) to provide quality services in four local government areas (LGAs) in Ebonyi and Kogi states.

• Figure 1 demonstrates the EQuiPP approach first focused on engagement, coordination and advocacy and building partnerships. MCSP and partners developed systems with sustainability in mind; systems components include recruitment of registered PPMVs, initial iCCM training and a system of joint supervision, with supervisors from the public primary health centers and peers within PPMV associations. Coordination with the suppliers, wholesalers and PPMV associations aims to improve the availability of essential commodities at PPMV shops through market forces. The monitoring system adapts the Federal Ministry of Health’s (FMOH) community health information system (CHIS) tools, iCCM tools and reporting structures. Community Based Organizations (CBOs) create demand for PPMV and facility services by reaching families in their homes and business locations.

Methods
• MCSP conducted a formative household survey in January and February 2018 among families (N=1600) with children under the age of five that had been sick with diarrhea, fever or pneumonia in the two weeks preceding the survey. Female caretakers were asked about care seeking and home care practices for sick children using questions adapted from the Demographic and Health Survey tools.

• We used a two-staged cluster sampling design. The first stage selected 40 enumeration areas (EAs) in each of the four LGA using probability proportional to size. The second stage used systematic random sampling to select households from a sampling frame obtained through enumeration of structures and identification of eligible households in sampled EAs done prior to data collection.

• Before the introduction of the EQuiPP approach in Ebonyi and Kogi states (March 2018), we conducted a baseline assessment of the quality of services for sick children under five years of age at 172 PPMV outlets (88 in each state). The assessment included interviews with PPMVs, inventory of stocks and equipment, and direct observation of PPMV’s management of sick children, with clinical re-examination by a clinically trained evaluator using the iCCM guidelines. Evaluators observed and re-examined up to three sick children at each outlet and also conducted exit interviews with caretakers. PPMVs’ visits were randomly chosen from the 542 PPMVs included in the EQuiPP approach.

• We conducted a midline assessment of the quality of services in July 2018—approximately three months after introduction of EQuiPP—among a new sample of 172 PPMVs using the same methods.

• Quality of care analyses compared PPMVs’ assessment, classification, treatment and counseling to steps in the iCCM algorithm required for the child’s classification as given by the clinical re-evaluator.

Results
• PPMVs are an important first source of treatment for sick children in Kogi and Ebonyi states among the 87% of caretakers who sought care outside the home. Caretakers were more likely to seek care at PPMVs in Ebonyi compared to Kogi children with symptoms of pneumonia were also slightly more likely to be taken to a PPMV for treatment (Figure 2).

• The proportion of sick children assessed for danger signs, tested for malaria and treated and/or referred correctly for their illness classifications increased significantly after the introduction of the EQuiPP approach, as did counseling practices (figure 3).

• The audit of inventory at PPMV outlets found increases in the availability of essential stocks for management of child illness (table).

• After the introduction of EQuiPP, PPMVs were more likely to be visited by supervisors from the public sector and PPMV association representatives.

Table: Stocks available on the day of the inventory audit at 172 PPMV outlets in Ebonyi and Kogi states at baseline and midline

<table>
<thead>
<tr>
<th>Stock available on the day of visit</th>
<th>RDT</th>
<th>ACT</th>
<th>AmoxDT</th>
<th>Zinc</th>
<th>ORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline audit (March 2018)</td>
<td>23.9%</td>
<td>54.5%</td>
<td>3.4%</td>
<td>28.4%</td>
<td>38.0%</td>
</tr>
<tr>
<td>Midline audit (July 2018)</td>
<td>72.2%</td>
<td>73.3%</td>
<td>89.0%</td>
<td>70.0%</td>
<td>72.1%</td>
</tr>
</tbody>
</table>

Discussion
• Our results suggest that PPMVs are a significant source of care for childhood illness, but that the quality of services were less than adequate at baseline. The introduction of the EQuiPP approach improved quality of services.

• The EQuiPP approach does not provide external inputs such as per diems or transport costs, and therefore is a promising, sustainable approach to improve availability of medications and quality of services at PPMV shops. Rigorous quality assessments at PPMV shops can demonstrate improvements and gaps.