Evaluation of the Quality of Community-based Integrated Management of Childhood Illness and Reproductive Health Programs in Madagascar

Madagascar recently scaled up volunteer community health worker (CHV) programs in community-based Integrated Management of Childhood Illness (c-IMCI) and reproductive health and family planning (RH/FP) to provide health care to remote and underserved communities.

Methods: A cross-sectional observational evaluation was conducted using a systematic sample of 149 CHVs trained in c-IMCI and 100 CHVs trained in RH/FP services. CHVs were interviewed on demographics, recruitment, training, supervision, commodity supply, and other measures of program functionality. CHVs were tested on knowledge of the case management guidelines or reproductive health and injectable contraception, respectively. Trained experts observed the performance of c-IMCI-trained CHVs as they each evaluated five ill children under 5 years old and RH/FP-trained CHVs as they completed five simulated female client encounters with uninstructed volunteers at a health facility. Each ill child was clinically re-assessed by a trained gold standard evaluator and results were compared to determine if c-IMCI CHVs correctly performed essential assessment, classification, and treatment tasks. A c-IMCI CHV performance score (on a scale of zero to 100) was calculated based on the mean percentage of tasks performed correctly for each ill child. A key outcome, the proportion of recommended treatments that were prescribed correctly by c-IMCI CHVs compared to the gold standard, was determined. RH/FP CHVs were observed by trained experts as they discussed and counseled female clients in family planning options. A RH/FP CHV performance score (zero to 100) was developed scoring the CHVs’ ability to obtain basic information about a clients’ contraception needs, determine eligibility for the selected family planning method in which clients showed an interest, and the quality of counseling provided for the chosen method. Multivariable linear regression models were used to identify factors associated with CHV performance.

Results: c-IMCI CHVs evaluated a total of 745 ill children under 5 years old. Their mean overall performance score was 75.1% (95% confidence interval [CI]: 72.3, 77.8). Higher scores on the knowledge assessment, having more years of education, and more CHV responsibilities were associated with better performance; whereas distance of greater than 20 km from a health facility, 1-5 supervision visits in the previous 12 months, and children presenting with respiratory illness or diarrhea were associated with a lower performance score. When compared to a gold standard evaluator, c-IMCI CHVs referred 68% of children with severe illness or other indications for immediate referral to a health facility, and chose the appropriate life-saving treatment, when it was needed, 53% of the time for children presenting with a c-IMCI treatable illness (uncomplicated diarrhea, pneumonia, or malaria). CHVs demonstrated good technical proficiency in performing and interpreting rapid diagnostics tests (RDTs) for malaria with 90% accuracy. However CHVs appropriately chose to use RDTs, when indicated, 55% of the time. RH/FP-trained CHVs had a total of 500 clinical encounters with women to provide family planning counseling. RH/FP-trained CHVs had a mean overall performance score of 73.9% (95% confidence interval [CI]: 70.3, 77.6). More education, more weekly volunteer hours, and receiving refresher training correlated with a higher performance score. For critical tasks, such as promoting informed choice, screening clients for pregnancy and potential medical contraindications to certain contraceptives, and providing instructions to ensure successful method use, RH/FP CHVs had a mean critical task performance score of 78.2% (95% CI: 75.5-80.8%). Nevertheless, RH/CHVs did not always completely follow standard checklists to (1) rule out pregnancy (the complete checklist was used in only 69% of client encounters) or (2) assess contraindications for oral contraceptive use (all necessary questions asked during only 41% of encounters with women expressing interest in the oral contraceptive method).

Conclusions: CHVs trained in c-IMCI in Madagascar frequently made errors in managing childhood illnesses similar to those reported for integrated community case management programs in other
countries. c-IMCI CHVs performed well in identifying and evaluating a child’s symptoms, though treatment quality was low. Specific case management skills that require improvement were identified. CHVs demonstrated suboptimal performance in referring children with severe disease and poor performance in classifying and treating children with uncomplicated diarrhea, pneumonia, and fever when compared to a gold standard evaluator. The CHVs trained in RDTs demonstrated good technique in performing and interpreting RDTs correctly but did not always choose to perform one when indicated. Although areas of deficiency were identified, RH/FP-trained CHVs proved capable of providing high-quality contraception services, especially in conducting the most medically critical tasks. Multivariable linear regression analysis identified factors associated with performance, which could be used to tailor and strengthen programs and identify those CHVs needing additional supervision and training. The magnitudes of the associations measured were small; therefore the establishment of comprehensive monitoring and evaluation plans will be critical in determining which program changes improve service delivery, quality, and effective access to care in the future.

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