given to Ministry of Health workers in Zambia for feedback and evaluation.
Going Forward: Health work conducted in rural and outlying communities requires access. Our tool, HealthTrax could improve access, time spent on roads, and ultimately increase productivity of health workers. Multiple health and non-health uses should be explored in the
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Effectiveness evaluation of a large-scale community-based program: Lessons from Ethiopia

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Program/Project Purpose: Between July 2013 and January 2014 the Last Ten Kilometers Project (L10K) has scaled-up community-based data for decision-making (CBDDM) strategy within the Government of Ethiopia's Health Extension Program (HEP) to improve maternal and newborn health (MNH) care practices in 115 rural districts (covering 15 million people). The effectiveness evaluation of the CBDDM scale-up was problematic due to lack of appropriate comparison areas. L10K designed and implemented an m-health based MIS to a) monitor the scale-up; and 2) evaluate the effectiveness of CBDDM in the absence of external comparison group.
Structure/Method/Design: L10K supported the district health office staff to train 3,070 kebele leaders, 6,215 health extension workers (HEWs) to organize 75,000+ health development army members (HDAs) to implement CBDDM. The innovation fostered 3,070 kebeles (i.e., communities with about 5,000 population, each) to generate and use data for improving MNH care practices. CBDDM identified underserved population and linked them with HEWs and community leaders to address the barriers in the access to MNH services. Using HEP's supportive supervision strategy to regularly visit kebeles the m-health based MIS gathered MNH service statistics and CBDDM performance data from HEW records. Supportive supervision data were uploaded into the cloud using smart phones which were made available to the managers to monitor CBDDM implementation. The effect of CBDDM on MNH was then determined by examining a dose-response relationship between CBDDM performance scale (that ranged between 0 and 10) and MNH care coverage (obtained from service statistics); communities with greater CBDDM performance were expected to have relatively high MNH coverage.
Outcomes & Evaluation: Data from 2,084 supportive supervisory visits to 804 kebeles between August 2013 and May 2014 indicated that the average CBDDM performance score and MNH coverage was improving over time. Regression analysis of the data demonstrated a dose-response relationship between CBDDM performance and MNH care coverage ($p < 0.05$). For example, communities with one unit higher CBDDM performance score were associated with 3 percentage-points higher coverage of institutional deliveries. The analysis indicated that it is plausible that the scaling-up of CBDDM was effective in improving MNH. CBDDM was accepted by the HEP managers because 1) it was simple to implement; and 2) it was within the policy framework to utilize HDAs to improve HEP service coverage. The acceptability of CBDDM facilitated the scale-up and potentially its sustainability.
Going Forward: There is a potential for incorporating other components HEP (like childhood immunization and family planning) within CBDDM. The analysis also demonstrates that study designs for effectiveness evaluation of large-scale programs can be incorporated within t
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Quality improvement practices decrease adverse event rates in a surgical male circumcision program in Malawi

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Background: As voluntary medical male circumcision (VMMC) scales up in resource-limited health systems, it is important to assess safety outcomes. The global goal to circumcise 80% of 15-49 year old males requires > 20 million circumcisions to avert > 3 million new HIV infections by 2015. Malawi alone is expected to complete over 2 million procedures. VMMC clinical trials demonstrated low adverse event (AE) rates, ranging 1.5% to 8%, but there is little and varied data on AE rates in VMMC programs. Our evaluation aimed to assess and improve AE rates in a VMMC program in Lilongwe, Malawi.
Methods: A pre/post, group problem-solving quality improvement (QI) project involving retrospective chart audits, case-conference classification of AEs using standard criteria, and provider training was conducted at a VMMC Clinic in Malawi. For each identified AE, the timing, assessment, treatment, and resolution of the event was recorded, then the clinical team classified each event for type and severity. During group discussions, VMMC providers were also queried regarding challenges in provision of care. After baseline evaluation, clinicians and managers set forward a QI plan to improve AE assessment and management. A repeat audit was conducted six months later, and chi-squared tests of proportions were used to evaluate prevalence and severity of AEs before and after the QI intervention.
Findings: During baseline audits, we identified 418 (13.9%) possible AEs in 3,000 charts, including 152 (5.1%) excluded after determination of provider misclassification. Of the remaining 266 AEs, the team concluded 257 (8.6%) were AEs related to the procedure (0.2% mild, 7.3% moderate, 1.1% severe). Case conference review concluded that 89% of AEs were not treated appropriately; the majority of these were inappropriate antibiotics prescriptions for mild symptoms. Training or other structural factors were also found to contribute AE rates and misclassification of cases including: provider prescription practices for management of post-operative inflammation were consistent with national guidelines for urethral discharge; available antibiotics were the STI formulary; and providers reported feeling well-trained in surgical care but insecure in skills related to post-operative assessment and care. After implementation of the program QI plan, a repeat process evaluating 2,540 cases found (4.5%) AEs (2.6% mild, 1.1% moderate, 0.8% severe); total and moderate AEs significantly decreased ($p<0.001$).
Interpretation: AE rates from this program are within range of clinical trial experiences. However, we detected problems with post-operative assessment, clinical management, and reporting. The QI process allowed for detection of misclassification and structural barriers, though was limited in the temporal pre/post design. Total and reportable AEs were significantly decreased after the QI process, resulting in improved clinical care as well as more accurate program reporting.