



Enhancing HIV commodity reporting using Real-time ARV Stock Status Monitoring tool in an HIV-accredited regional referral hospital, Kampala, March-August 2024

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Summary

Background: Timely reporting of HIV commodity stock status is critical for effective supply chain management. However, only four (12%) of 31 HIV-accredited sites in Kampala submitted all weekly reports in quarter one 2024 using the Real-time ARV Stock Status Monitoring (RASS) tool. We aimed to improve weekly reporting from 0% to 100% by August 2024 at a non-reporting HIV-accredited regional referral hospital using a continuous quality improvement (CQI) approach.

Methods: At a regional referral hospital in Kampala, we formed a CQI team, conducted a baseline assessment in March 2024 using RASS dashboard data, and identified non-reporting root causes. We implemented interventions from April to July 2024, including orienting new staff and introducing WhatsApp reminders. We monitored progress weekly using the Plan-Do-Check-Act (PDCA) cycle, with data analyzed monthly to assess trends.

Results: Baseline reporting was 0% in March 2024, due to lack of staff orientation. Orientation of two RASS users in April increased reporting to 80% by May, and with WhatsApp reminders in June, it reached 100% and was sustained through August.

Conclusion: Staff orientation and WhatsApp reminders significantly improved HIV commodity reporting. We recommend institutionalizing these interventions across HIV-accredited sites in Kampala to enhance stock management.

Background

Effective supply chain management of antiretroviral (ARV) drugs and HIV test kits is essential to prevent stock-outs, which have repeatedly disrupted HIV care in the country (2,3). To strengthen supply chain management, the Monitoring and Evaluation Technical Support (METs) developed the Real-time ARV Stock Status (RASS) monitoring tool in 2018. The RASS is a computer-based system integrated with the national health information system that enables weekly tracking of HIV commodity stock levels. The tool provides for a dashboard that facilitates submission of weekly stock status reports, allowing for timely redistribution of commodities and minimizing the risk of stock-outs. HIV accredited health facilities in Kampala were required to report ARV and HIV test kit stock status weekly through the dashboard. However, in quarter one 2024, a regional referral hospital in Kampala failed to submit any weekly RASS reports.



Using a continuous quality improvement approach, we aimed to improve reporting at this site from 0% to 100% by August 2024.

Methods

We conducted the study at an HIV-accredited regional referral hospital in Kampala, Uganda from March to August 2024. Despite its critical role in delivering HIV care and treatment services, the hospital faced challenges with accurately and consistently reporting weekly HIV commodities using the RASS system. Although two logistics officers at this site were trained on RASS reporting during the 2018 national rollout, these challenges persisted.

We formed a CQI team and conducted a baseline assessment using data from the RASS dashboard to confirm zero weekly reports submitted by the site. Using the fishbone technique, we identified lack of staff orientation as the primary modifiable root cause. The absence of reminders was a secondary contributing factor.

In April 2024, we oriented two newly transferred RASS users on reporting protocols, including coding, submission deadlines, and verification procedures. In May 2024, a WhatsApp group was created to send weekly reminders and reinforce timely reporting.

We monitored report submission to RASS on a weekly basis. Weekly monitoring facilitated provision of immediate feedback and address issues in real-time, ensuring timely intervention adjustments.

We calculated the percentage of reports submitted on a monthly and assessed trends in reporting compliance. Monthly analysis provided a stable metric for evaluating intervention effectiveness and sustained improvements, aligning with standard CQI practices for tracking progress over time.

This study was determined to be a non-research activity by the US Centers for Disease Control and Prevention (CDC). Administrative clearance to conduct the study was sought from the regional referral hospital. To ensure data confidentiality, Real-time ARV Stock Status (RASS) dashboard data were stored on secure servers with access restricted to authorized personnel only.

Results

The interventions led to progressive improvements in weekly reporting rates (Figure 1). At baseline in March 2024, reporting was 0% (0/4 expected reports submitted). In April 2024, after staff orientation, reporting rose to 75% (3/4) reports submitted, with one missed due to a public holiday. In May 2024, the introduction of WhatsApp reminders further increased reporting to 80% (8/10 reports submitted for April and May combined). From June to August 2024, monitoring confirmed sustained 100% reporting (Figure 1).

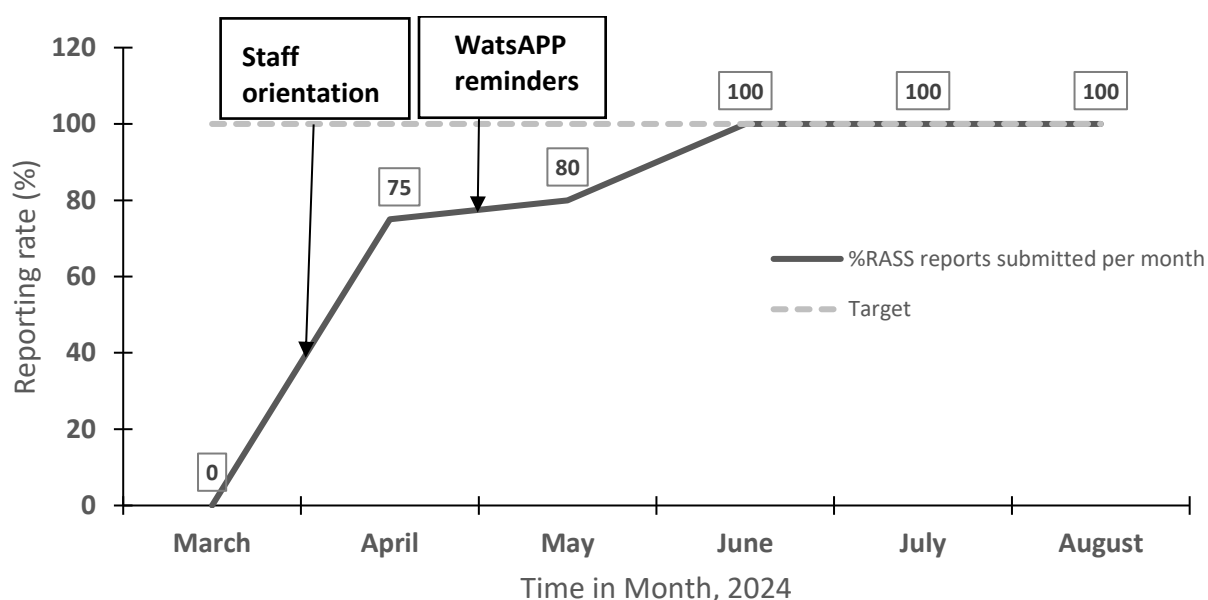


Figure 1: Weekly HIV commodity reporting rates at a selected HIV-accredited regional referral hospital, Kampala, March-August 2024

Discussion

This CQI project demonstrated that targeted, low-cost interventions such as staff orientation and WhatsApp reminders significantly improved HIV commodity reporting at the HIV-accredited regional referral hospital in Kampala, Uganda. Reporting compliance initially increased from 0% to 75% by the end of April 2024, following a two-day staff orientation on April 1–2, highlighting the critical role of structured training in addressing knowledge gaps, particularly among newly transferred logistics officers. This finding aligns with existing literature demonstrating that comprehensive employee training enhances performance and operational efficiency in health systems (6). The orientation likely addressed deficiencies in RASS system familiarity, enabling users to navigate its technical requirements more effectively, a challenge that had persisted at this site despite training during the 2018 national rollout. The subsequent introduction of WhatsApp reminders on May 3, 2024, further improved compliance, sustaining 80% reporting by the end of May and achieving 100% by early June. This success reflects the power of low-cost digital communication tools in reinforcing accountability and fostering consistent reporting behaviour. WhatsApp, widely used in Uganda due to its accessibility and affordability, provided timely prompts that aligned with staff workflows, reducing delay. This outcome is consistent with studies on text message reminders in healthcare, which demonstrate their efficacy in improving adherence to protocols, such as medication adherence and data reporting (7). Together, these interventions addressed both technical and behavioural barriers, creating a combined effect that led to sustained improvements.



These findings highlight the importance of addressing personnel-related barriers, such as inadequate orientation and lack of ongoing support, to improve reporting compliance in resource-constrained settings.

Study limitations: While our interventions were successful, our project had some limitations. First, we focused on a single HIV-accredited site, which limits the generalizability of our findings to all 31 sites in Kampala. Additionally, our study did not assess the long-term sustainability of these interventions beyond August 2024. Future studies should explore whether ongoing training and digital reminders continue to maintain high reporting compliance over extended periods.

Conclusion: Staff orientation and WhatsApp reminders improved weekly HIV commodity reporting at a Kampala HIV accredited site, sustaining compliance by August 2024. These simple CQI interventions are scalable for Kampala HIV stock management.

Conflict of interest: The authors declare that they had no conflict of interest.

Authors' contributions: TMR, did the conceptualization of the study idea, data analysis, writing, and editing of the bulletin, SG, JW, GB, TN, and IK guidance in the writing and reviewing of the bulletin. All authors read and approved the final bulletin.

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