

Improving Pharmaceutical Care Services through Improved Essential Medicines Availability: A Case of Women and Newborn Hospital of University Teaching Hospitals, Lusaka, Zambia

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Abstract:- Health care systems can only function optimally with adequate supply and availability of pharmaceuticals. The effectiveness of the pharmaceutical sector depends on its ability to make available affordable and quality medicines that are safe and rationally used to meet the needs of the population and clients (FIP, 2009). Medicine unavailability can compromise patient outcome severely. The project aimed at improving pharmaceutical care services through improved availability of essential medicines from the baseline of 50% to the desired 90% from 2nd quarter of 2018 to 1st quarter of 2019. A quality improvement (QI) project was implemented using Performance Improvement Approach (PIA). The availability of essential medicines and tracer drugs for Women and Newborn Hospital (WNH) was assessed. Data sources included stock control cards, requisition books, goods received notes (GRN), prescriptions and short interviews to patients. Root cause analysis using a fish bone was done and the main root causes identified were poor record keeping, late submission of reports to Medical Stores Ltd (MSL), insufficient supply of medicines and lack of proper supervision from the pharmacist in charge. Project Interventions included regular in-house trainings in record management & quantification, ensuring enough record keeping materials, strengthening supervision, introduction of electronic logistics management information system (eLMIS), engagement of hospital management for local purchase of medicines and recommendation for increased number of positions for staff. The project found that the hospital recorded remarkable improvement in availability of essential medicines at 12 months following the QI project implementation compared to before. The baseline medicine availability was 50% and after interventions, medicine availability was 95.6%. It can be concluded that strengthened supervision, training of pharmacy staff in eLMIS, hospital management involvement are paramount in ensuring availability of key medicines at all times.

Keywords:- Quality Improvement, Medicine Availability, Electronic Logistics Management Information System, Root Cause, Supervision, Record Keeping Materials.

I. INTRODUCTION

Health care systems can only function optimally with adequate supply and availability of pharmaceuticals (Landry and Beaulieu, 2013). The effectiveness of the pharmaceutical sector depends on its ability to make available affordable and quality medicines that are safe and rationally used to meet the needs of the population and clients (FIP, 2009). Drug unavailability can compromise patient outcome severely (ISMP, 2018).

Purpose: The project aimed at improving pharmaceutical care services through improved availability of essential medicines from the baseline of 50% to the desired 90% from 2nd quarter of 2018 to 1st quarter of 2019.

Methodology: A quality improvement project was implemented using Performance Improvement Approach (PIA). PIA is the recommended approach which the Zambian Ministry of Health (MOH) uses to improve quality health care. In this case, the availability of essential medicines and tracer drugs for Women and Newborn Hospital (WNH) was assessed. Data sources included stock control cards, requisition books, goods received notes (GRN), prescriptions and short interviews to patients.

Root cause analysis using a fish bone was done and the main root causes identified were poor record keeping, late submission of reports to Medical Stores Ltd (MSL), insufficient supply of medicines and lack of proper supervision from the pharmacist in charge.

II. PROJECT INTERVENTIONS

Interventions undertaken to improve the pharmaceutical care services included the following:

- Regular in-house trainings in record management & quantification-Done through weekly meetings in the first quarter of the project and monthly thereafter and the responsible person was the pharmacist in charge
- Ensure enough record keeping materials- Stock taking of record keeping materials, procurement of the required materials and updating stock control cards as accurately as possible. This was assigned to the pharmacist in charge of stores in collaboration with the procurement officer and the Chief Nursing Officer.
- Strengthen supervision- Conduct supervisory spot checks at various pharmacy points at least twice a week, introduction of log-in sheets for personnel. This activity was assigned to the pharmacist in charge
- Introduction of electronic logistics management information system (eLMIS)-This was done through

mentorship of pharmacy staff by mentors from JSI and MSL

- Engage management for local purchase of medicines- This was done through regular updates to the Senior Medical Superintendent (SMS) on the stock status and need to increase budgetary allocation for essential medicines.
- Recommendation for increased number of positions for staff-requested for more staffing through the office of the SMS.

III. RESULTS

Women and Newborn Hospital has recorded remarkable improvement in availability of essential medicines at 12 months following the QI project implementation compared to before. As at first quarter of 2019, medicine availability was at 95.6 percent compared to baseline 50 percent. The table below summaries the project results.

<i>Quarter/Cadre</i>	<i>Percent availability</i>	<i>Remarks</i>
<i>Quarter two 2018</i>	86.0	Notably dopamine, meropenem and cefuroxime were 100% unavailable. However, dobutamine, imipenem and cephalixin were made available respectively
<i>Quarter three 2018</i>	85.3	Notably dopamine and meropenem were 100% unavailable. However, dobutamine (preferred by practitioners in neonatology department) and imipenem were made available respectively. Atropine and metoclopramide were out of stock the entire quarter
<i>Quarter four 2018</i>	88.9	Notably dopamine injection was still out of stock however, dobutamine was available. Meropenem was made available. Labetalol injection was out of stock however, hydralazine injection was available
<i>Quarter one 2019</i>	95.6	Notably imipenem was out of stock due to change of protocol and meropenem was available. Dopamine was still out of stock
<i>Average % availability of medicines for the period under review</i>	88.7	

Table 1:- Quarterly availability of essential medicines

IV. CONCLUSION

Drug availability has greatly and steadily increased from the baseline of 50 percent in the second quarter of 2018 to 95.6 percent in the first quarter of 2019. This was mainly achieved through strengthened supervision in addition to training of staff in eLMIS to ensure inventories were up to date and that reports to MSL were done on time and as per schedule. Management's involvement was paramount and priority was given to ensure availability of key drugs at all times and there was 130 percent increment from the initial budget allocation for the drugs. In-house trainings have however, not been as regular as they should be and the shortage of staff is still a serious draw back especially after the transfer the transfer of critical pharmacy staff that were effected which eventually led to suspension of the 24/7 pharmaceutical services.

V. RECOMMENDATIONS

- Need for management skills training for pharmacists
- Strengthen electronic logistics management information systems
- Need for establishment of a pharmacy structure to create more positions

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