

## A 5-year Tracer Medicines availability trend in the Obstetrics Gynecology Department of a Teaching Hospital

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### ABSTRACT

#### *Background*

Medications are indispensable in women's healthcare. Yet, there are barriers to their availability. Tracer medicines (TMs), as a representative subset of Essential Medicines (EMs) was pioneered by the World Health Organization (WHO) with a 100% expected availability benchmark. Managing the availability of TMs is a determinant of pharmacy performance, access to medicines and healthcare quality. There is paucity of studies on the availability of TMs in an obstetrics and Gynecology unit of a hospital.

#### *Aim*

The aim of the study was to assess the availability of TMs in an Obstetrics Gynecology (O &G) Department of a Teaching Hospital.

#### *Methodology*

The study was conducted on the 31<sup>st</sup> of January each year from 2019 to 2023 at the O & G department of Korle-Bu Teaching Hospital. Data collected were analyzed using a modified WHO/ Health Action International (WHO/HAI) methodology to review TM availability only. The original WHO/HAI methodology reviews TM prices, availability and affordability. TM is available if physically existent and unexpired on the day of survey.

#### *Results*

At the O & G, there are 21 molecules that are classified as TM. For the years 2020, 2021 and 2023, all 21 molecules were 100% available on the day of the survey. In 2019 and 2022, 85.7% and 90.5% availability were recorded. Specific TMs that recorded some stock outs were Injections Ephedrine 30mg, Injection Magnesium sulphate 50%, Injection pethidine 100mg, Injection Vitamin K 1mg, as well as Tetracycline eye ointment.

#### *Conclusion*

Availability of TMs for women's healthcare was less than 100% expected benchmark on some occasions. Policies are needed to improve availability, through an improved management of tracer medicines. A hospital-wide survey of more specialties is desirable for a wider view of access to TMs.

Keywords: Tracer Medicine, Availability, expected benchmark,

## **INTRODUCTION**

It is a basic human right for people to access high standards of health (World Health Organisation, 2006). Maternal morbidity and mortality remain high in Ghana but this can be improved with evidence based and cost effective interventions that are readily available and accessible. Safeguarding the health of women is always dependent on an improved access to the needed medication in adequate quantities. Over a ten-year period, studies show that over one million women's lives can be saved when the needed medication for women's health is routinely available.

Assessing Tracer Medicines (TM) is one of the many tools available to ensure women's health. TMs are a representative subset of Essential Medicines (EMs) that was pioneered by the World Health Organization (WHO) in 1977 with a 100 % availability goal on any day of survey (WHO, 2006). The WHO further defines EMs as medicines of utmost importance and indispensable for the health needs of a population. EMs are selected based on evidence of safety, efficacy, and effectiveness of cost and disease pattern. TMs are needed to be available at prices the individual and society can readily afford. There is evidence that improved availability and affordability of quality medicines are important to reduce morbidity and mortality among women.

Studies on the availability of TMs can reveal barriers to access, which will provide opportunities for analysis and innovative solutions (Nyanwura et al, 2013). This will ultimately lead to improved pharmacy performance, access to medicines and quality healthcare. Few studies have looked at the availability of TMs in women's healthcare. This study aimed at assessing the availability of TMs needed for women's healthcare on the 31<sup>st</sup> January, of each year from 2019 to 2023 at the Obstetrics and Gynecology Department of a teaching hospital in Ghana.

## **METHODOLOGY**

### ***Study Setting***

The study was conducted at the Obstetrics and Gynecology (O & G) Department of Korle-Bu Teaching Hospital in Accra (KBTH), Ghana. The Korle Teaching Hospital is a 2000-bed facility. The Hospital has a bed capacity of over 2,000 and an average outpatient attendance of 1,500 with about 250 in-patient admissions. The department runs a 24-hour service for both Obstetrics and gynecology cases with a bed capacity of 375 (Annual report of the Korlebu Teaching Hospital, 2016). The study was conducted on the 31<sup>st</sup> of January each year from 2019 to 2023 as the days of survey.

### ***Study Design***

A retrospective data collection approach was conducted by reviewing TMs as indicated in the institutional Lightwave Health Information Management System (LHIMS), TMs data base and stock taking records of the O&G Department Pharmacy.

### ***Data Extraction and Analysis***

Data collected were analyzed using a modified WHO/ Health Action International (WHO/HAI) methodology to review TM availability. The original WHO/HAI methodology reviews TM prices, availability and affordability. The current study focused exclusively on availability of TM. A TM is classified as available if physically existent, and unexpired on the survey day.

The inclusion criteria of the study were 21 medications categorized as tracer and used to manage major causes of morbidity and mortality as shown in the table below

**Table 1** List of medications designated as Tracer Medicines

Nos	Form	Description of Tracer Medicine
1.	Injection	Amoksiklav 1.2G
2.	Injection	Bupivacaine Heavy
3.	Injection	Calcium Gluconate 10%
4.	Injection	Ephedrine 50mg
5.	Injection	Ergometrine Maleate 0.5mg
6.	Injection	Labetalol 100mg
7.	Injection	Magnesium Sulphate 50% 10mls
8.	Injection	Midazolam 5mg
9.	Injection	Normal Saline
10.	Injection	Oxytocin 10 i.u.
11.	Injection	Paracetamol 500mg
12.	Injection	Pethidine 100 mg
13.	Injection	Ringers Lactate
14.	Injection	Tranexamic Acid 500mg
15.	Injection	Vitamin K1 mg
16.	Gel	Chlorhexidine 7%
17.	Sc.	Clexane 40 mg
18.	Supp.	Diclofenac 100mg
19.	Tab.	Misoprostol 200ug
20.	Oc.	Tetracycline 1 %
21.	Inj	Metronidazole 500mg

The LHIMS name and availability of each TM on the day of survey were recorded.

## Operational Definitions

### *Tracer Medicines*

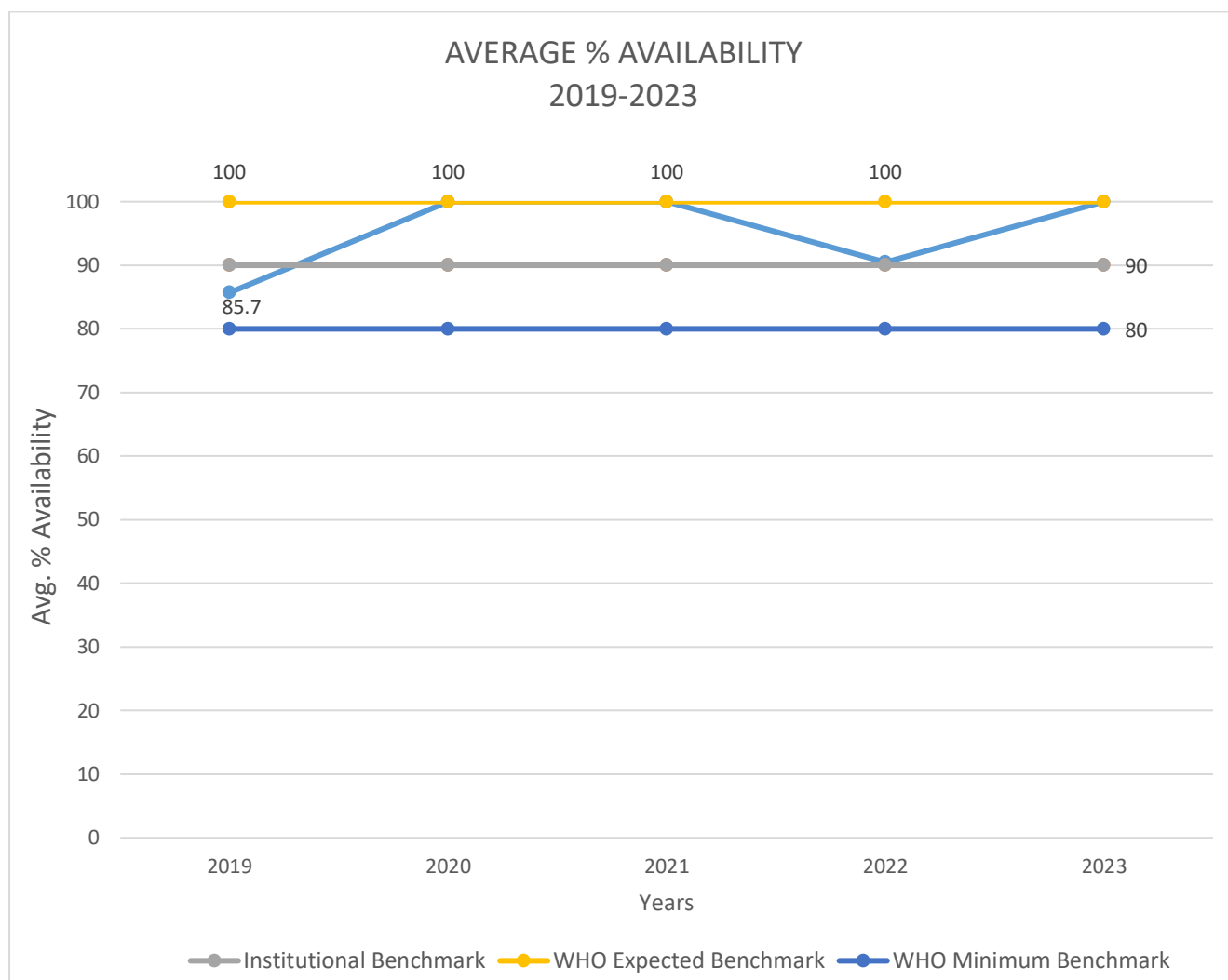
Lifesaving medicines selected according to safety, efficacy, economics of cost, disease pattern and “need for availability at all times” for the prevention or treatment of the major causes of morbidity and mortality (WHO, 2008, Schumann 2018).

### *Availability*

Readily and easily accessible to patients requiring women’s healthcare service at any time the need arose, including the day of survey (Muiruri & Mugambi, 2017). The WHO recommends benchmark availability of 100% for TMs. The O & G department of the KBTH sets benchmark availability at 90%.

## RESULTS

As indicated on figure 1 below, there were 21 molecules that are classified as TM. For the years 2020, 2021 and 2023, all 21 molecules were 100% available on the day of the survey. In 2019 and 2022, 85.7% and 90.5% availability were recorded. Specific TMs that recorded some stock outs were Injections Ephedrine 30mg, Injection Magnesium sulphate 50%, Injection pethidine 100mg, Injection Vitamin K 1mg, as well as Tetracycline eye ointment.



## DISCUSSION

The study set out to determine the availability of TMs over a five-year period as a tool to influence decision making and strategies in improving pharmacy performance in the hospital. At the O&G department in focus, there were twenty-one (21) medications listed as tracer. The five-year average availability was 95.24%, which meets the institutional benchmark, though less than the WHO recommendation. Other studies report significantly lower findings. A study in Myanmar (UFNPA, 2019) showed a 52.9% whilst another study in Ethiopia showed 76.3% (Kefale, 2019). An earlier study in Ghana recorded availability of 85.7% (Arhinful, 2009). Even though some levels of stock outs were recorded, the study's findings of five-year availability of 95% indicate a high level of accessibility to essential medications. This suggests good pharmacy performance.

This positive outcome can be attributed to several factors, such as efficient supply chain management, robust medication procurement processes, and a commitment to patient-centered care. The high availability of tracer medicines demonstrates a level of preparedness to meet the medication needs of patients promptly, which is especially critical in a department focused on maternal health and women's well-being.

Availability of essential medicines is important in several ways. The availability of essential medicines is directly linked to improved patient outcomes. When women receive timely access to necessary medications, their conditions can be managed effectively, reducing the risk of complications and ensuring optimal health during pregnancy, childbirth, and various gynecological issues. High availability of tracer medicines helps in minimizing delays in treatment. Patients don't need to wait for medications to be procured, leading to faster initiation of therapy and addressing health concerns promptly.

Obstetrics and Gynecology departments often deal with emergency situations. High medication availability ensures that healthcare providers can respond promptly to emergencies, potentially preventing adverse outcomes.

While the study's findings are encouraging, it's essential to continue monitoring medication availability to ensure consistency over time. Additionally, considering the dynamic nature of healthcare, continuous improvement strategies can be implemented to maintain or enhance medication accessibility. Every effort is needed to ensure the expected availability so as to achieve the new Sustainable Development Goal (SDG) of less than 70 Maternal Mortality Rate (MMR) per 100,000 live births by 2030 (WHO, 2012).

## **CONCLUSION**

Availability of TMs for women's healthcare was satisfactory, though less than the WHO benchmark. The study's finding is a positive reflection of the pharmacy's commitment to patient care. This high availability holds significant implications for patient outcomes, satisfaction, and the overall quality of healthcare delivery. The study underscores the importance of maintaining and further improving medication availability to ensure optimal care for women during various stages of their reproductive health journey.

## **LIMITATIONS**

The study was limited in scope in that it did not survey the whole teaching hospital, and this could influence outcomes since there are other satellite pharmacies from which there is a possibility of access to the out-of-stock TMs. Since the study is cross sectional, the findings may not be a true reflection of the reality throughout the year.

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