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# ANALYSIS OF PATIENT CARE AND FACILITY INDICATORS IN PUBLIC HEALTH INSTITUTIONS IN KANO STATE, NIGERIA

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**ABSTRACT**

Health care received in health institutions depends on adequate consultation, correct prescription and dispensing with relevant information given to patient. These are some of the indicators for assessing rational drug use. Though, many studies had been done on prescription indicators, there is a dearth of such studies on patient care and facility indicators. Based on that, these indicators were evaluated using the WHO drug use indicator format in Mohammed Abdullahi Wase Specialist Hospital (MAWSH), Sheik Jidda General Hospital (SJGH), Murtala Mohammed Specialist Hospital (MMSH), Sir Muhammadu Sanusi General Hospital (SMSGH), Waziri Gidado General Hospital (WGGH) and Aminu Kano Teaching Hospital (AKTH). The result of the study showed that the average consultation and dispensing time among the studied health institutions were within the range of 2.3 to 4.2 minutes and 24 to 36 seconds respectively. A high number of drugs prescribed conformed to National Essential Drugs List and were dispensed (90-96%) by the Hospitals Pharmacies. Most patients (80-95%) knew the correct dosages, but none of the dispensed drugs was adequately labeled. The availability of key drugs was 84% to 87%. AKTH is the only health institution with a hospital formulary which is not available to most care providers.

**Key words:** Drug Use Indicators, Facility Indicators, Health Institutions, Patient Care Indicators, Rational Drug Use

## INTRODUCTION

Drug therapy is considered to be a major component of patient management in health care settings. Although the benefits gained by patients from pharmacological interventions are valuable, the risks of drugs *per se* and the consequences of inappropriate use cannot be overlooked. Most leading causes of disability and death in developing countries are preventable and can be treated or managed with cost-effective essential drugs. In the late 1970's it was estimated that 60-80% of people in developing countries lack regular access to even the most essential drugs (Quick *et al.,* 1997) despite the high proportion of health budget spent on drugs. Consequently the concept of essential drugs was born in 1975 with the aim of improving availability of basic drugs and rational use of same.

Studies on the appropriate use of drugs especially in developing countries were made difficult due to lack of objective quantitative parameters. In 1993, the World Health Organization (WHO) in

collaboration with International Network for Rational Use of Drugs (INRUD) introduced a set of indicators called *"drug use indicators"* that can be used to assess rational drug use (WHO, 1993). These indicators comprise of: (i) *Prescribing Indicators* that measure the performance of health care providers in several key dimensions related to the appropriate use of drugs. The indicators are based on the prescription practices observed in a sample of clinical encounters taking place at health institution. (ii) *Patient Care Indicators:* the time that prescribers and dispensers spend with each patient sets important limits on the potential quality of diagnosis and treatment. Patients for whom drugs are prescribed are expected to receive well-labelled medications and should understand how to take each drug. These indicators measure key aspects of what patients experience at health institutions, and whether they understand how to take their medications appropriately.

(iii) *Facility Indicators:* the ability to prescribe or dispense drugs rationally is influenced by many factors of the working environment. Two particularly important components are an adequate supply of essential drugs and access to unbiased information about drugs. Without these it is difficult for health personnel to function effectively. Therefore, these indicators measure whether the health personnel can function efficiently.

Though, many studies had been done on prescription indicators in Nigeria and other developing countries, there is a dearth of such studies on patient care and facility indicators. The present study was aimed at determining the value of these indicators with a view to providing information for further study.

## METHOD

Five secondary and one tertiary health institutions were selected by stratified random sampling using local government as stratum. The hospitals selected were Mohammed Abdullahi Wase Specialist Hospital (MAWSH), Sheik Jidda General Hospital (SJGH), Murtala Mohammed Specialist Hospital (MMSH), Sir Muhammadu Sanusi General Hospital (SMSGH), Waziri Gidado General Hospital (WGGH) and Aminu Kano Teaching Hospital (AKTH). Data of 100 general outpatients were randomly collected between the month of July and December, 2004 from each facility. The demographic data of each patient including age, sex, diagnosis, and drugs prescribed were recorded. Patient care indicators were measured prospectively by recording consultation time and dispensing time. Percentages of drugs actually dispensed and adequately labeled were determined by examining the drug packages/bottles the patient had actually received. It was noted whether they had been adequately labeled, *viz.* whether the name of the patient, the generic name of the drug and when the drug should be taken was written on them (WHO, 1995). Lastly, the patient's knowledge of when and in what quantity each drug that was actually dispensed should be taken was evaluated. Failure to know either of these two points would result in patient's knowledge being scored as inadequate. Data pertaining to the "*facility indicators*" were gathered at the end of the present study. The prescribers were asked whether any essential drugs list existed in the outpatient department during the study period (WHO, 1993). Twenty five essential drugs formed the checklist to measure the availability of "key drugs", i.e. drugs that should always be available

for the treatment of common health problems, during the study period (WHO, 1993). This information was obtained from the records in the pharmacies. Even if one unit of unexpired product listed in the check list was available the drug was recorded as being in stock.

The average consultation/dispensing time were calculated by diving the total time taken (using stop clock) to consult/dispense drugs to series of patients by the number of patients. For the purpose of this study, the time spent on billing and filling the prescription was not considered as part of dispensing time.

Percentages of drugs actually dispensed/adequately labeled were computed by dividing the number of drugs dispensed/adequately labeled by the total number of prescribed drugs presented for dispensing.

Percentage of patients who had adequate knowledge of correct dosage schedule was computed by dividing the number of patients who had adequate knowledge of the dosing schedule by the total number of patients interviewed.

## RESULTS

The average consultation time recorded among the studied health institutions was within the limits of 2.3 to 4.2 minutes with an average of 3.4minutes (Fig. 1). The average dispensing time varies between pharmacies. The range was from 24 and 36 seconds. It was somewhat longer in AKTH (36 sec) than in the remaining institutions (Fig. 2).

Percentages of drugs dispensed were closely similar among the pharmacies in all the institutions (90% to 96%). Although higher percentages were observed in the AKTH, SJGH and WGGH as compared to MAWSH, SMSGH and MMSH (Fig. 3). All drugs dispensed were inadequately labeled as the name of the patient and the generic name of the drug were not written. However, all drug packages/bottles had a pictogram drawn on them indicating how the drug should be taken.

Majority of the patients (80%and 95%) claimed to know the correct dosage schedule for all drugs prescribed, but this does not necessarily reflect reality since the response "I know the dose" was accepted as positive answer. The availability of key drugs in all the institutions studied was high, ranging from 84% to 87%. Out of the six health institutions studied only AKTH had a hospital formulary. The remaining five had neither a formulary nor Essential Drug List.

## DISCUSSION

The average time, which a patient spent with a prescriber in the studied health institutions, was within the limit of 2.3 to 4.2 minutes with an average of 3.4minutes (Fig. 1). Such short time corresponded well with values reported by Hogerzeil *et al*. (1989) from other developing countries (3 to 6.5 minutes). Although it is difficult to estimate optimal time period for a patient encounter, such time is too short to conduct complete patient evaluation and prescribe the therapy for most cases. Though the average dispensing time was similar among the pharmacies (between 24 to 36 seconds), it was somewhat longer in AKTH (36 sec) than the other institutions (Fig. 2). These figures are slightly higher than the average value obtained (12.5 seconds) from twelve other developing countries (Hogerzeil *et al*., 1993) but far shorter than 74-86.1 seconds recorded in Nepal (Kafle *et al*., 1992) and UAE

(Hassan, *et al.,* 1997) pharmacies. The shorter consulting and dispensing time recorded may be because of the higher patient: provider ratio in the hospitals studied compared with health institutions in those countries.

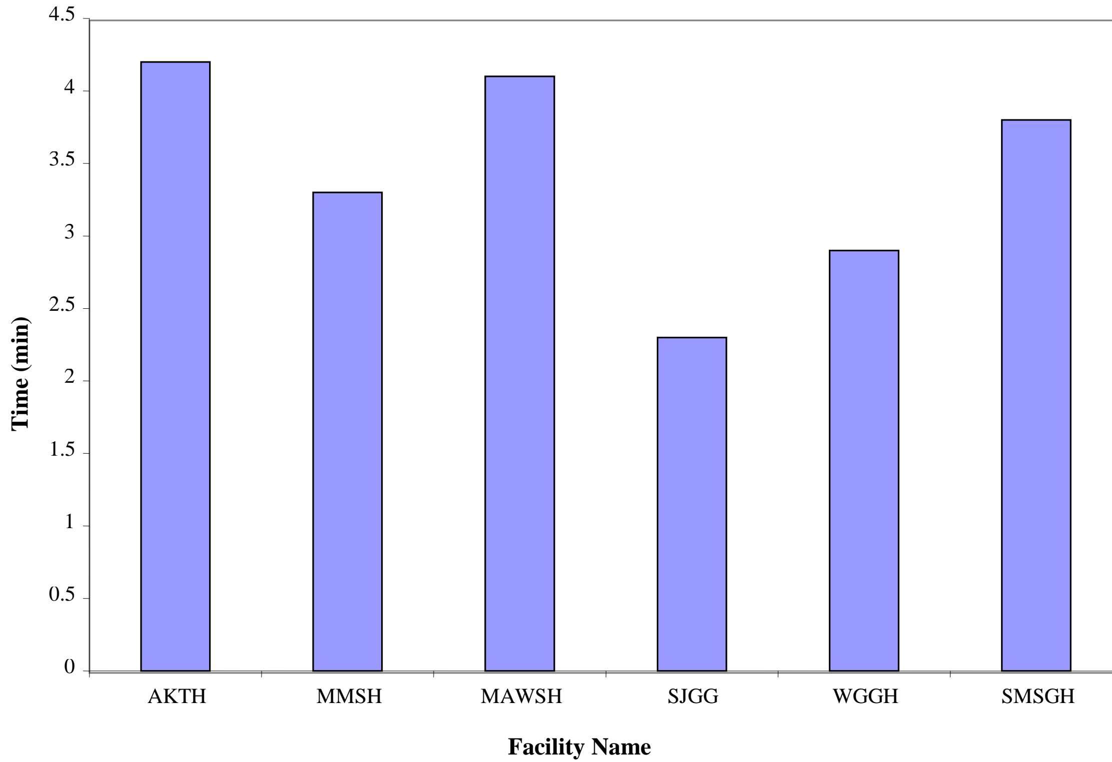


**Figure 1: Average Consultation Time in Aminu Kano Teaching Hospital (AKTH), Murtala Mohammed Specialist Hospital (MMSH), Mohammed Abdullahi Wase Specialist Hospital (MAWSH), Sheik Jidda General Hospital (SJGH), Waziri Gidado General Hospital (WGGH) and Sir Muhammadu Sanusi General Hospital (SMSGH)**

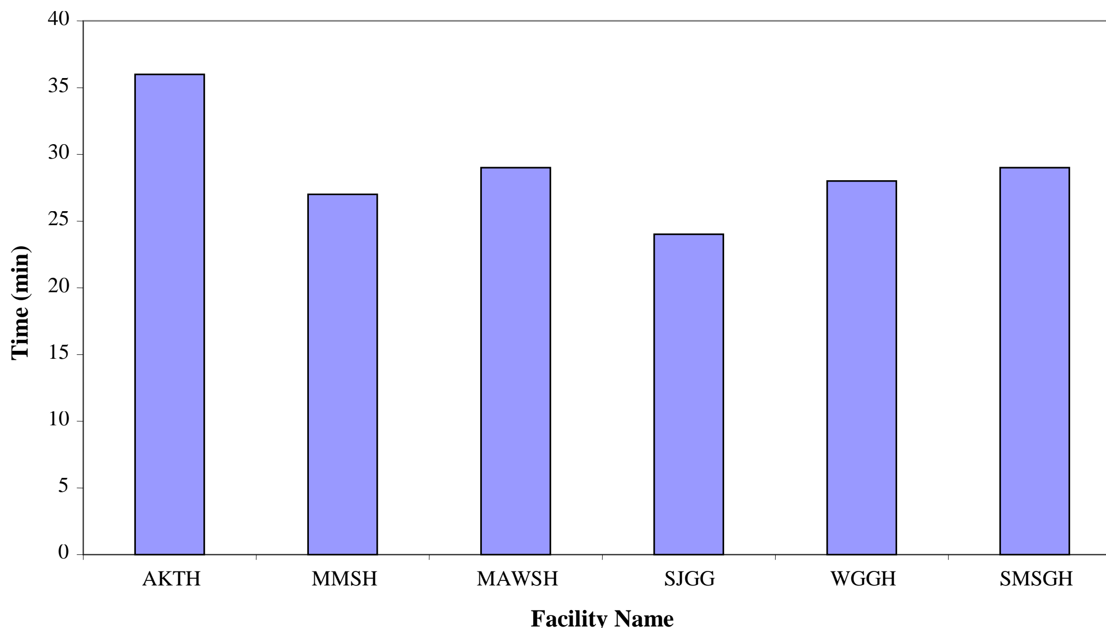


**Figure 2: Average Dispensing Time in Aminu Kano Teaching Hospital (AKTH), Murtala Mohammed Specialist Hospital (MMSH), Mohammed Abdullahi Wase Specialist Hospital (MAWSH), Sheik Jidda General Hospital (SJGH), Waziri Gidado General Hospital (WGGH) and Sir Muhammadu Sanusi General Hospital (SMSGH)**

Percentage of drugs actually dispensed (Fig. 3) was similar among the pharmacies in the study area (90% to 96%), as well as those obtained in Burkina Faso (Krause *et al.,* 1999), Cambodia (Chareonkul *et al.,* 2002), and Ethiopia (Desta *et a.,l* 1997). This indicates appropriate supply of drugs in all the hospitals and such policy guarantees a minimum level of health care to the citizens.

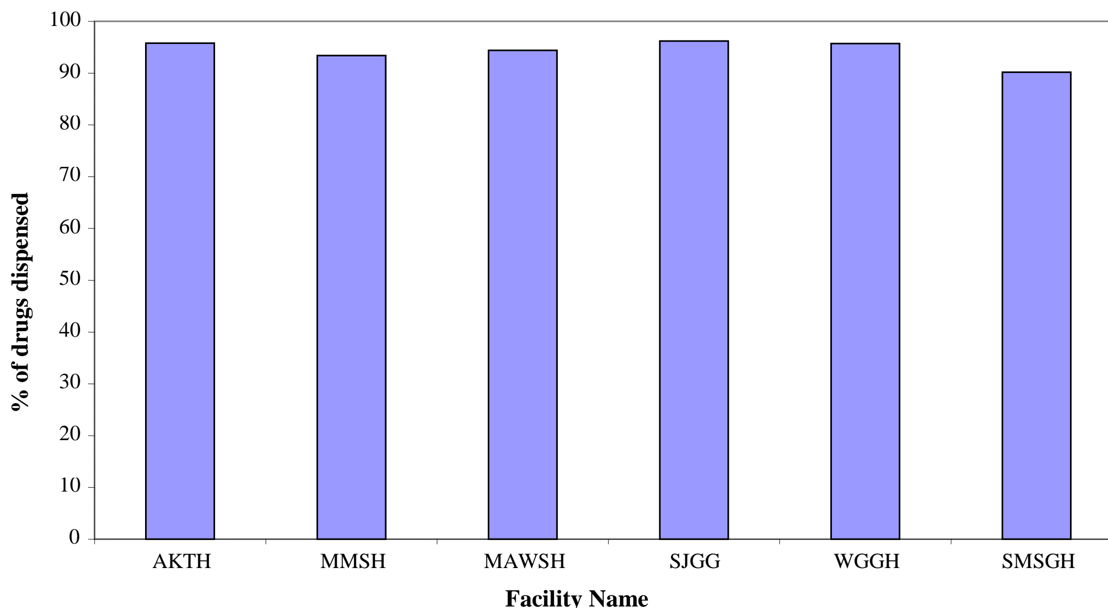


**Figure 3: Percentage of drugs dispensed in Aminu Kano Teaching Hospital (AKTH), Murtala Mohammed Specialist Hospital (MMSH), Mohammed Abdullahi Wase Specialist Hospital (MAWSH), Sheik Jidda General Hospital (SJGH), Waziri Gidado General Hospital (WGGH) and Sir Muhammadu Sanusi General Hospital (SMSGH)**

Although not a single dispensed drug was adequately labeled in the six hospitals and which was also observed in Cambodia (Chareonkul *et al.,* 2002); figures of 56.2% and 87%, have been reported in India (Hazra, *et al.,* 2000) and Tanzania (Massele *et al.*, 2001) respectively. When the dispensers were asked about the inadequate labeling, they stated that given their typical workload they hardly got time to interact with the patients and thus they preferred to draw the pictogram and explain how the individual drugs should be taken. The use of pictograms has been shown to improve recall of medical information in people with low literacy skills (Dowse and Ehlers, 2001). However, writing the patient's name and generic name of the drug on the label is necessary (WHO, 1995). This would also help in reducing the risk of dispensing errors (Peterson, 1999). Educational and behavioral intervention and use of pre-packaged drugs would probably improve the dispensing practice.

Results that came up after investigation of the patients' knowledge of correct dosage indicate relatively very high values (70% to 85%). But this does not necessarily reflect reality since the majority of patients were hostile and not willing to repeat the whole dose regimen at the instance of the investigator. Their response “I know the dose” was accepted as positive answer, but it remains doubtful whether they really knew the dose regimens.

One notable characteristic of pharmacies in public health institutions in Kano was their consistency in stocking of essential drugs. This could be as a result of the

active Drug Revolving Scheme operating in the state and the appropriate policy about the priorities in supplying drugs by its managers. Because of this, the availability of key drugs in the EDL in the six health institutions studied was high (85–96%). A similar figure of 86.6% availability of key drugs has been reported from Cambodia (Chareonkul *et al.,* 2002), a lower figure of 54% from Bangladesh (Guyon *et al.,* 1994*)* and an optimal figure of 100% from Ethiopia (Desta *et al.,* 1997). In spite of the high availability of key drugs in the six health institutions, only AKTH has a hospital formulary. The remaining had neither the formulary nor copies of Essential Drug List.

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