

# Medicine Sales by Itinerant Vendors at Lorry Stations – A Case Study at Kejetia Station in Kumasi, Ghana

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## Abstract

The laws of many countries including Ghana prohibit the sale of drugs by itinerant vendors. One can, however, easily find this practice in many lorry stations of major cities in Ghana. This study considered the sources and classes of the drugs sold by ambulant drug vendors at Kejetia Lorry Station in Kumasi, Ghana. The objectives of the study were to determine the sources and classes of drugs sold by these vendors, their existing storage conditions, and the reasons why people patronised their services instead of visiting a health facility when unwell. A cross-sectional descriptive study was conducted using questionnaires to interview vendors (n = 120) and patrons (n = 150).

The results showed that the drugs procured by these vendors were mainly from pharmacies (52.5%) and licensed over-the-counter medicine sellers (30%). Most of these drugs were classified as analgesics (61%), anthelmintics (16%) and antibiotics (10%). Others included antimalarials (7.5%) and antihypertensives (2.5%). It was also realised that the drugs were kept in polythene bags all day which exposes the drugs to heat and possible degradation. The clients on the other hand, suggested that the services of these vendors provided an alternative to that obtained at health facilities where one would spend a lengthy period, and an opportunity to re-fill prescriptions at a relatively lower cost as their main reasons for patronage. Since these vendors have limited knowledge on the uses, contraindications etc of drugs, their operations pose a serious public health problem to the society and hence should be addressed.

**Keywords**-Drug vendors, Ghana, Itinerant, pharmacy, procure, public health

## INTRODUCTION

In many developing countries, lack of adequate health facilities and qualified personnel, and poverty may drive people to seek health care from non-professionals or quacks who may not be knowledgeable in the health conditions they profess to treat or manage [1, 2]. In majority of cases, this act involves the supply of drugs or pharmaceutical products whose purchase may or may not be restricted. In Ghana, the sale of drugs is restricted by law to only licensed pharmaceutical outlets who have the personnel with requisite knowledge and training to handle the class of drugs available in the facility [3]. To this end, the Pharmacy Council of Ghana is charged with the responsibility of securing in the public interest the highest standards in the practice of pharmacy [3]. The pharmacist and the pharmaceutical support staff have therefore been duly trained and licensed to keep and manage different classes of drugs or medicines depending on one's training. Similarly, the import, export and manufacture of drugs is restricted to only licensed pharmaceutical companies with the requisite staff who have adequate knowledge on the use or manufacture of such drugs in their facilities [4]. Again, drugs are supposed to be kept at low temperatures to preserve its integrity – thus almost all pharmaceutical outlets are equipped with either air conditioners or at least fans and the drugs are also kept away from direct sunlight. It is therefore surprising to see itinerant drug vendors in most major bus terminals in the country selling drugs, kept in plastic bags, either moving from one stall to another or in buses to prospective buyers. The medicines on sale range from over-the-counter analgesics, which can be purchased without a prescription, to antibiotics which are prescription only medicine.

In Ghana, drugs are classified as over-the-counter (OTC), pharmacist recommended (P) and prescription only

medicines (POM) [5]. Based on the above classification, personnel in the pharmaceutical care are permitted to handle or dispense these drugs depending on their qualification and expertise [5]. However, drug vendors with no formal training in pharmacy or little knowledge on these drugs, diagnose, prescribe, and dispense all manner of drugs. Since they do not have adequate knowledge on the uses, side-effects, drug-drug interactions, their activities can be dangerous and a potential public health threat to the citizens and inhabitants of Ghana. This is because their actions can lead to misuse or irrational use of drugs with dire consequences. For instance, inappropriate use of antibiotics can lead to the development of antimicrobial resistance and hence therapeutic failures [6]; and the misuse of non-steroidal anti-inflammatory drugs (NSAIDs) can also lead to gastric ulceration and renal problems in susceptible individuals [7].

The problem of the sale of medicines outside designated facilities is not only limited to Ghana, but can be found in many other countries in Africa and elsewhere [8, 9]. In Nigeria for instance, sale of drugs in markets, buses and other places which have not been licensed has been reported where the vendors use misleading and sensational information to obtain high consumer patronage [2]. Similarly in Togo the sale of drugs by informal vendors in stores located away from shopping roads has been documented [10]. In another survey in Cameroon and DR Congo it was found that about 28 % of drugs procured from informal vendors were out-of-specification medicines and all falsified drugs identified in the study were from informal vendors [11].

Sale of medicine by itinerant vendors can pose a major health threat as the source from which the drugs are obtained may not be certain and the storage conditions may also not be appropriate. The activities of itinerant drug

vendors (IDV) in Ghana have been described in various papers by Oppong & Williams, 2001 and Williams et. al 2004. [1, 12]. They focused on places where IDV can be found in Ghana, their gender distribution, and their reasons for joining the profession. The current study aims at analyzing the classes of drugs sold by itinerant vendors, their sources of supply, storage conditions and the reasons why people patronize their services instead of visiting accredited health facilities.

## MATERIALS AND METHODS

### Study Design

The study was a cross-sectional survey conducted to describe the sources and classes of drugs sold by itinerant vendors, their storage conditions, and the reasons why the public patronise them. The study was carried out between February to April 2012 using semi-structured questionnaires to interview both vendors and a cross-section of clients who patronize their services.

The observations were followed with an interview through series of questions on questionnaires. The questionnaires sought to obtain information from vendors on the sources from which the vendors get their supply of drugs; how the drugs are stored; and the classes of drugs sold. The clients or patrons of the vendors' activities were also to provide information mainly on the reasons for patronage of the vendors' services rather than visiting a health facility.

### Study area

The study was carried out at Kejetia Lorry Station in Kumasi prior to its re-development in 2015. Kumasi is the regional capital of the Ashanti Region and the second largest city in Ghana. The Kejetia station is one of the biggest vehicle terminal/market in Ghana. This station has over one thousand stores/stalls and serves as a bus terminal where one can find a vehicle to almost every suburb in Kumasi and most major cities in the country. Many commercial activities go on there and hosts thousands of visitors from the whole region and beyond. This site is one major place where itinerant vendors of drugs ply their trade because this lorry station hosts thousands of visitors daily from all parts of the country and beyond.

### Study Population and Eligibility Criteria

In all one hundred and twenty itinerant drug vendors and one hundred and fifty buyers/ clients participated in the study which was conducted at Kejetia. The inclusion criteria were itinerant vendors of medicine who were actively selling their products at the station and clients who were seen to have patronized the services of the vendors. Persons who sold medicines in Pharmacies and Licensed Over-the-Counter Medicine Stores were not included in the study.

### Ethical Consideration

In the conduct of the study, consent was obtained from the interviewees (vendors and their clients). The aim of the study was explained to them, and their participation was voluntary. They were at liberty to opt out at any time during the interview.

### Data Collection

The vendors were interviewed on the types of drugs they sold, the sources of their supplies and the storage conditions

of the drugs after acquisition. The buyers/clients, on the other hand, were interviewed on the reasons for patronizing these drugs and whether the labels on drugs bought were checked. The interviewer checked the classes or categories of drugs sold by the vendors.

### Data Analysis

The information from the vendors (i.e. classes of drugs sold by the vendors, how they are stored and how the drugs are procured) were recorded and then grouped. The responses of the consumers on their reasons for patronage were also recorded. All the results obtained were analyzed using Microsoft Office (Excel) 2010.

## RESULTS AND DISCUSSION

### Procurement of drugs

The study revealed that the major sources from where the itinerant vendors obtained their supplies were mostly pharmacies (52.5%) and licenced OTC stores (30.0%), as depicted in Figure 1. The other sources were from industries (10.0%) and from family and friends (7.5%).

In Ghana, pharmacies may be a retail or wholesale outlet. There are few that carry out both services (i.e. wholesale and retail). According to the medicine supply chain system in the country, retail pharmacies obtain their supplies from wholesale pharmacies. The retail pharmacies in turn supply or dispense the drugs to individuals with valid prescriptions and those who request for OTC drugs. It is unethical in the practice of pharmacy in Ghana to supply drugs to unauthorised persons, such as itinerant vendors. However, there may be some of these facilities who may sell these medicines in relatively large quantities to these vendors probably for financial gains and not necessarily for the good of the practice. For some of the itinerant vendors, they evade the regulatory system in the medicine supply chain by purchasing the drugs in smaller quantities from different outlets and put them together to sell. As indicated above, the second common source of medicines for the vendors were the OTC stores. These vendors probably liaise with the OTC vendors to get their supply from them. That is to say that the OTC vendors probably bought from wholesalers for their 'friends' who may sell at lorry stations. The foregoing indicated that some of the facilities were not operating strictly according to the rules governing the supply of the drugs as directed by the Pharmacy Council of Ghana. This problem has further been compounded by the inability of the regulatory institution to effectively monitor the provision of pharmaceutical services in all the facilities due to limited resources. As a result, some individuals take advantage of the situation and practice inappropriately. Few of the vendors claimed to have been supplied from pharmaceutical industries. This looks a bit out of place as pharmaceutical industries would not usually supply drugs to individuals but rather wholesale outlets which are licensed to trade in drugs. This observation may therefore be a cause for worry if the practice seems to be recurring. It is therefore imperative for the medicine regulatory agencies to be in the knowing of such practice and put-up measures to curb it. The educational background of most of the itinerant drug vendors is quite low;[1] they therefore might

see pharmacies as the industries. Again, some of the manufacturing industries have depots/ wholesale outlets from where they distribute their products. It is possible some might have obtained the supplies from such places which they consider as part of the company/industry.

It was seen from the results that some vendors get their supply from family and friends. This source may pose a danger as these are likely to be leftover, expired or ‘damaged’ drugs [13, 14]. Leftover drugs are those that individuals do not finish using and keep for future use or abandon their use altogether as a result of getting healed before the drug got finished or stopped using because of side effects or some other reasons[13]. Expired drugs are those that have gone pass the shelf-life date indicated on the drug label or the container. The damaged drugs are those that may have spillage on the lid or closure, those that are found among broken or damaged containers but may be intact etc. All these sources may pose health threats as leftover drugs may not be properly stored and it is not advisable that one uses such drugs [13, 14]. Expired drugs may have toxic effect, for example, it is known that tetracycline becomes toxic when it expires [15]. Drugs found among damaged ones may also not be recommended for use. It is possible that the understanding of participants

with regards to the family and friends may be different from the real meaning the interviewer sought. Those vendors probably understood it to be whether friends and relatives are those who purchase the stocks on their behalf. Notwithstanding this, some vendors may seek for unused drugs from friend and families and sell. This practice may cause health threat as these products may have expired and/or stored improperly.

It has been estimated that worldwide more than 50% of all medicines are prescribed, dispensed or sold inappropriately, while 50% of patients fail to take them correctly [16]. This includes drugs or medicines sold by itinerant vendors. Although drugs are indispensable in the management of several disease conditions, its sale and distribution must be supervised by professionals who have in-depth knowledge in drugs and medicines.

**Classes of drugs sold by Itinerant Vendors**

From the results in Figure 2, it was realized that about 60% of the drugs sold by these vendors were analgesics or painkillers, followed by anthelmintics (16%) and antibiotics (10%). Antimalarials (7.5%) and antihypertensives (2.5%), among other classes of medicines (3%) were on the minority.

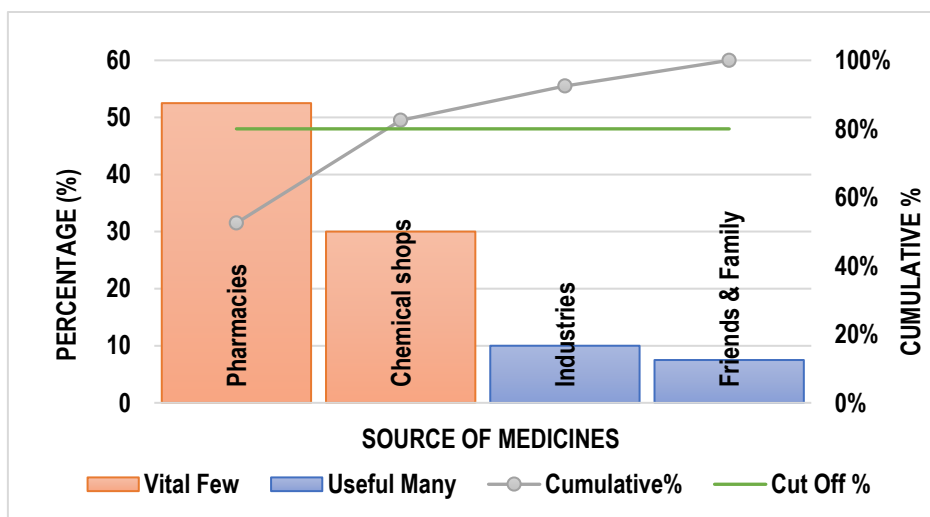


Figure 1: Pareto chart of the sources of medicines for the itinerant vendors

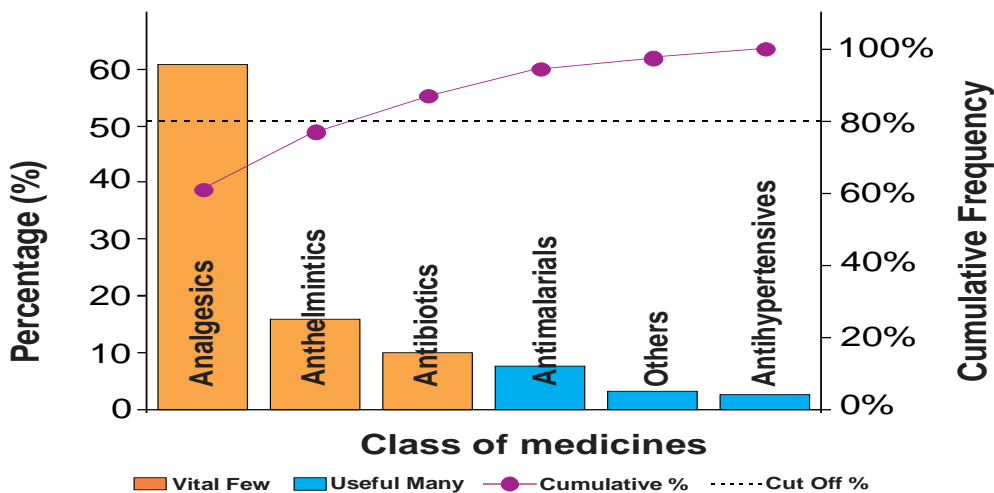


Figure 2: Classes of Medicines Sold by Itinerant vendors of drugs

The relatively high percentage of analgesics (61%) suggested that these are the classes of drugs mostly patronized by consumers. This may be because many diseases/illnesses present with pain or inflammation as symptoms, making the use of analgesics or painkillers popular in both prescribed medicines and those obtained over-the-counter. Whilst their use may be popular, the excessive use of some specific analgesics may lead to gastric ulcer, liver disease, Cushing's syndrome etc. For instance, overdosage of paracetamol (i.e. consumption of more than 4 g in a day) may lead to liver damage which may not be apparent until about one week after taking it; the excessive use of corticosteroids may lead to Cushing's syndrome and the use of non-steroidal anti-inflammatory drugs in persons with or prone to ulcer may lead to exacerbation of the condition [17]. Since itinerant vendors are persons with little knowledge in the adverse effects of drugs, they dispense the drugs without probing into the history of the patients or clients and this can have detrimental effects on people who patronize their services. The anthelmintics (16%) constituted the next important class of drugs sold by drug vendors. The high patronage of this class of drugs may be due to the frequent education that one should deworm every three months. Patrons may therefore take advantage of their proximities to the vendors or succumb to the enticing marketing skills to buy for themselves and their families. Though most anthelmintics may be relatively safe in many people when correct doses are administered, some are contraindicated in pregnancy and in children under 2 years [17]. Since these vendors lack or do not have much information about the drugs, they may not be able to counsel their clients on the contraindications of these drugs with its attendant consequences.

Another group of drugs of much significance marketed by these vendors were the antibiotics (10%). These drugs are supposed to be dispensed either in response to a doctor's prescription or recommended by a pharmacist (i.e., health care personnel with adequate information on these drugs) to treat infections for a specified period. This is done to maximize its therapeutic efficacy whilst minimizing side-effects. The indiscriminate or irrational use of antibiotics can lead to development of resistance to antimicrobial agents which has been a global issue of late. [6,18,19]. Irrational medicine use includes inappropriate use of antimicrobials, frequently inadequate dosage, use for non-microbial diseases and inappropriate self-medication of prescription only medicines [16] In a study by Newman and colleagues (2011), the prevalence of resistance to some common antibiotics like tetracycline, ampicillin, cotrimoxazole, chloramphenicol was between 70 to 80% [20]. These activities can have serious consequences on the health sector with serious implications on the economy as the state may have to use its foreign exchange to import newer antimicrobial agents which might be expensive.

Another class of drugs sold by these vendors worth mentioning were the antihypertensive drugs (2.5%) which are usually prescribed for patients with elevated blood pressure. The doses of the drugs are gradually titrated to the needs of the patient in question and is reviewed periodically to assess how the patient is responding to the therapy.

Therefore, the sale of antihypertensives to clients without appropriate monitoring can be harmful to the overall well-being of the patient. If a hypertensive patient is given an overdose of their drug, it may lead to hypotension, collapse and possibly death. Similarly, the administration of inadequate doses over a period may lead to the development of complications such as myocardial infarction, stroke, hypertensive encephalopathy and hypertensive nephrosclerosis etc. [7]. These complications can put a huge economic burden on the individual and society.

It was also realized that in majority of the cases, about 80% of clients made complaints and were given medicine to manage their diseases (data not shown). This gives a lot of responsibility to the drug vendors who must consider the signs and symptoms presented by the client to diagnose the patient without the aid of any laboratory investigation or the use of thermometers, sphygmomanometers or other tools to help in diagnosis. This symptomatic approach to the diagnosis and management of diseases by unprofessional personnel in the health care system can be dangerous and can put the patient at risk since different ailments may have common symptoms.

#### ***Storage of the drugs***

On the storage of the drugs, it was observed that once the drugs have been acquired by the vendors, they were kept in plastic or polythene bags during the day when the vendors were selling, and in their rooms after the day's activity without allowing fresh air into these bags. This constitutes poor storage condition, contrary to what the respective medicine manufacturers recommended, i.e., keeping it in a cool dry place away from sunlight. These conditions could lead to the rapid deterioration or breakdown of active drug components, thereby rendering them ineffective and/or toxic; with some of the breakdown products of some drugs being toxic. This could partly explain why antibiotics obtained from unauthorized personnel/sources contained a high percentage of substandard drugs compared to those obtained from authorized sources, according to a study by Bekoe and others, although the drugs had not expired [21]. Substandard antimicrobials contribute significantly to the development of antimicrobial resistance since the organisms may be exposed to sub-therapeutic doses of the drugs.

Other classes of drugs that were mentioned include antacids such as Magnesium trisilicate tablets, aluminium hydroxide; laxatives such as bisacodyl, creams and ointments for topical application.

#### ***Patronage of services of Itinerant Vendors of Drugs***

The major reasons cited by clients for patronizing the services of these vendors were overcrowding in hospitals and clinics (for most public health facilities with quality service) and re-filling of prescriptions from a previous doctor's visit. (Table 1).

From Table 1, it was observed that at least three among every ten clients cited overcrowding at health facilities as the main reason for patronizing the services of these vendors. The services of the vendors, to clients, seem to solve the problem of overcrowding at health centers. In

Ghana, some health facilities oversee many clients, and this can lead to delays in attending to patients. Some patients see laboratory services as waste of time and resources; they do not know that it helps in proper diagnosis of their conditions. They erroneously think the vendors can take the role of trained medical personnel in diagnosis, prescription and dispensing all at once. Additionally, the clients see the vendors as providing a convenient access to health care services at a relatively cheap cost compared to private clinics whose charges range from moderate to high. Few people cited economic reasons, which is inability to pay for health services.

**Table 1: Reasons for the customer's patronage of the drugs**

Reasons for patronage	Percentage (%)
Low prices of the drugs	14
Availability of drug vendors	17
Overcrowding at health facilities	33
Lapses in regulation	5
Re-fill of drug prescriptions	30
Quick services	15
Laziness in visiting clinic	21

Another reason cited by the clients for patronizing the services of itinerant vendors was an opportunity to re-fill prescriptions without the need to visit a health facility at a relatively cheaper cost. For instance, if a patient was given a pain killer to manage pains or an antimalarial when they visited the hospital, they would prefer to buy the same drugs from the vendors, if available when they have similar symptoms. This practice might also be dangerous as different diseases may have similar symptoms.

The clients also cited availability or easy access as one of the reasons they patronize itinerant vending services. The vendors move from one bus to another and/or from store to store, so they provide a convenient access to drugs whilst one is in a bus or at the market carrying out one's business. It was also realized that none of the consumers interviewed had ever checked the expiry date on the label. They just bought the drugs and used them. There is therefore the possibility that some of the drugs might be expired, putting the clients at a further risk.

### CONCLUSION

The activities of drug vendors are dangerous as patrons may not be able to report side-effects or interactions that occur upon usage of the drug. Whereas if the drug had been purchased from a pharmacy or licensed over-the-counter outlet such complaints could be reported for further investigation through pharmacovigilance. The study has highlighted the congestion at health facilities and easy access to "re-fill" prescriptions as the major reasons for client's patronage of itinerant drug vending. Major classes of drugs sold by these vendors are analgesics, anthelmintics and antibiotics. Activities of itinerant vendors should be properly looked at as it is a health hazard.

### LIMITATION

The present study focused on the survey of the vendors and their clients. Samples of the medicines considered in this study were however not assayed to establish correlation with the observations made.

### RECOMMENDATION

The public should be educated on the potential dangers posed by the activities of itinerant vendors of drug so that they stay away from their services. More health facilities are needed in the country as well as the expansion of the existing health facilities to be able to adequately cater for the population. The vendors should also be educated on the dangers their practice may pose to society and encouraged to find an alternative employment which will not endanger the lives of others.

### CONFLICT OF INTEREST

The authors declare that they have no conflict of interest and they did not receive funding from any source for this study.

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