

AVOIDANCE OF MEDICINE WASTAGE IN PRIVATE CLINICS IN HONG KONG: PRACTITIONERS' PERSPECTIVES

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ABSTRACT

Hong Kong with its well-established healthcare and medicine system and professional health services is one of the renowned healthiest places in the world. In fact, Hong Kong's healthcare system is running on a dual-track basis comprising public and private sectors. This study intends to explore medicine waste management and sustainability. First, we examine the existing phenomenon of Hong Kong medicine waste. Also, we discuss the causes of medical waste from a private clinic doctors' perspective. In addition, we identify possible policies and recommendations to minimize the medicine wastage in private clinic in Hong Kong as well as improve the healthcare supply chain practices.

Qualitative research with in-depth interviews of doctors and medical practitioners have been carried out to gather their views and opinion of medication wastage, including the current medicine waste situation and the means of handling the expired medicines. Also, the study analyzes the centralized procurement platform effectiveness and suggests some possible policies for government to adopt. Interviewees mentioned that medication waste has occurred over decades. Medicine wastages are not only financial burdens, but also social burdens. If the medication waste problem cannot be alleviated, it will affect the population health and environment in the long run.

An all-rounded healthcare supply chain with efficient logistics operations would help the government to collect excess medicines from private clinics and redistribute to some Non-Government Organizations (NGOs). In fact, all parties including manufacturers, distributors, prescribers, and patients have the responsibilities to maintain and implement suitable policies to prevent bulk medicine waste. This research study provides the foundation of medicine wastage in private clinics in Hong Kong. Future research can investigate the medicine wastage in other aspects as well as consolidate the literatures in both industrial and public perspectives.

KEYWORDS

Medicine wastage, healthcare, supply chain, Hong Kong

INTRODUCTION

Hong Kong, with its well-established healthcare and medicine system and professional health services, is one of the renowned healthiest places in the world. Hong Kong's healthcare system is running on a dual-track basis

composing public and private sectors [17]. The public sector is managed by the Hospital Authority while the private sector is managed by the private practitioner's own. Although these two sectors are adopting different operation modes, the ultimate goal of the healthcare system is to safeguard local population health and quality of life [15].

In the past few years, Hong Kong has been facing increasing medicine waste quantities and environmental challenges. Medication waste refers to pharmaceutical products that is leftover, unused, or expired throughout the medication supply chain [23, 7]. Some research found that landfills in Hong Kong contain antibiotics which might involve immense stress on the natural environment [14]. Residues will influence microorganisms and marine fish in the water sources, enter human food chain and lead to long-term effect on humans [16]. As the healthcare budgets of Hong Kong are limited, unused medicines will be considered a squander of resources. It is therefore necessary to reduce the city's medical waste and minimize financial and environmental burdens.

A massive volume of medical waste is a serious issue for any city. The accumulated large quantities of drug waste impose financial burdens and environmental pollution [3]. In view of this, the Hong Kong Hospital Authority should frame various policies to reduce medicine waste.

The main objective of this study is to investigate the phenomenon of medicine waste and propose possible policies to reduce medicine waste. Through in-depth interviews with private clinic practitioners, the study figures out the possible reasons of medicine waste in private clinic sectors in Hong Kong and finds ways to enhance the city's healthcare system. Specifically, the following sections include: [1] a review of relevant literature; [2] the methodology of data collection; [3] a discussion of the causes and solutions of medical wastage in private clinics; [4] recommendations on how to reduce medicine wastes; and [5] a conclusion of the discussion.

LITERATURE REVIEW

Medicine wastage includes any medicine that remains unused or expired anywhere along the medicine supply chain [23]. Medication waste can be generated in all stages of pharmaceutical supply chain, including doctors' prescribing, pharmacists' dispensing and unused or expired medicines [4]. For instance, physicians repeat prescriptions or dispensed in massive quantities, or patients intentionally or unintentionally fail to take medications as prescribed. These will lead to unused medicines accumulation at home [2].

Medicine wastage is a common problem among developed and developing countries around the world

[10]. At least 20% of medicines are wasted and returned to pharmacies in New Zealand and the United States each year. In Tanzania, more than 50% of medicines dispensed are wasted annually.

Studies found numerous contributing factors to medicine wastage on the patient side. For instance, discontinuation of medication, switching of medication, or death of patients [23]. Patients' poor adherence to medication, excessive prescription or altered therapy method also result in medicine waste [8, 5]. Few studies have investigated the contributing factors to medicine wastage on the clinic side. No study has examined the medicine wastage generated in private clinics from the practicing private doctors' perspective.

RESEARCH METHODOLOGY

In order to gain better insight into the medicine wastage issues and possible measures to reduce medicine wastage in private clinics in Hong Kong, in-depth interviews with the private clinic doctors were conducted. In-depth interviews were used because they allowed the respondents to express their feelings and beliefs freely and could collect higher quality of data because of the opportunity to build rapport and trust with the respondents [22].

RESEARCH FINDINGS AND DISCUSSION

The research results showed that the amount of medical wastage of private clinics depends on the operation of each clinic. Private clinic chains, shared private clinics and individual private clinics are all different in their operation mode and medicine handling practices, which lead to different extent of medicine wastage. In the following, we will discuss these two causes deeply.

DIFFERENT TYPES OF PRIVATE CLINICS

Undoubtedly, private clinics in Hong Kong are one of the main parties contributing to medicine waste. Most private clinic chains use centralized procurement platforms for their medicines, which help reduce their drug waste. However, for shared private clinics and individual private clinics, they have to purchase medicines from pharmaceutical companies themselves. Pharmaceutical companies are used to offering them bulk-purchase incentives (like buying 50 packs and get 10 packs free) or selling them nearly expired medicines at a discount,

resulting in excessive medicine stocks and medicine wastage. As research found out, drug representatives from pharmaceutical companies use a variety of promotional techniques to attract private clinics to purchase their medicines, for instance, offering gifts, providing research grants, or paying visits frequently [6]. In addition, shared private clinics face big difficulties in managing their medicine usage as each doctor may have a different specialty and have different types of patients. They need to stock different types of medicines (general medicines and specialized medicines) in the same clinic. Excessive medicine orders and inventory will therefore occur. Besides, general practices doctors with various medicine types would have more wastage. These are the main reasons why private clinics generate massive medicine waste.

DIFFERENT MEANS OF HANDLING EXPIRED MEDICINES

Improper control and handling of expired medicines always result in environmental and public health risks. There are diverse ways for private doctors to handle and prevent expired medicines. According to the research participants, some private doctors will store medicine expiry dates into their computers and keep checking the dates regularly. They will take out those medicines which are going to be expired in 3 months or 6 months, thereby maintain medicine inventory precisely and reduce waste. Some private doctors will return medicines to the drug suppliers to minimize wastage. For medications which have been expired only for a short period or worn off slightly, some private doctors will give them to their families for personal use. However, some liquid medicines (like eye drops and liquid antibiotics) definitely cannot be used after expiration. Medical authorities found that though the effectiveness of the expired medicines may decrease, but their potency can remain even a decade after expired [13].

RELATIONSHIP BETWEEN PHARMACEUTICAL COMPANIES AND PRIVATE CLINICS

Most of the medicines of private clinics are supplied by pharmaceutical companies. This is a typical buyer-seller relationship. Some research found that an open and transparent relationship between pharmaceutical companies and private clinics could reduce medicine wastage [9]. If pharmaceutical companies can collaborate with private clinics and adjust distribution quantities of medicines according to the actual needs of private clinics, this could minimize medicine waste. However, as the research participants pointed out, it is difficult to determine whether close relationship between pharmaceutical companies and private clinics can

decrease the medicine wastage in Hong Kong. Each stakeholder has its considerations. For private clinics in Hong Kong, medicine waste is not their main consideration. What they are concerned about more is the cost-effectiveness of the medicine procurement.

CENTRALIZED PROCUREMENT PLATFORM

Centralized medicine procurement platform is a single team or a department handling all the medicine procurement for the organization [11]. The public healthcare sector of Hong Kong has long been adopting this procurement approach. But for private healthcare sector, each private clinic uses its own regular procurement means. There is no incentive for private clinics to adopt centralized medicine procurement platform since regular procurement process already contains discounts from the pharmaceutical companies. Adopting a centralized procurement system would not allow them to enjoy extra discounts. Therefore, it without incentives for private practitioners to adopt centralized procurement platform. Besides, there will be high switching costs for private clinics to adopt centralized medicine procurement platform, including time and extra money.

SEPARATION OF PRESCRIBING AND DISPENSING

Prescribing and dispensing are two crucial roles in the treatment of patients. Prescribing concludes patients' problem evaluation, and suitable medication therapy selection and gives information for the therapy (Gilbert, 1998). Doctors are the most significant source for prescribed medicine. Doctors can decide the use of medicine for each patient professionally. Dispensing is checking for possible medicine interaction and medicine use consultation [18]. Due to the lack of pharmacists, some Asia countries are trying to separate the prescribing and dispensing of physicians and pharmacists [20]. The purpose of separating prescribing and dispensing is to boost the drug treatment and ensure better practice in prescribing level [21].

Hong Kong is a fast-paced city where people are always in a rush. Unlike other countries, in Hong Kong, prescribing and dispensing of medicines are both made by private clinics. Private clinic doctors are used to provide medicines to patients after medical consultation. Fast and instant response to patients and effective treatment plan are the key to success for private clinics in Hong Kong private clinics' is the superiority. If medicine prescribing and dispensing can be separated in Hong Kong, such that the doctors of private clinics provide medical prescriptions

while the pharmacists of pharmacies provide the prescription medicines, private clinics will no longer need to keep and manage their own medicines. It can avoid medicine wastage in private clinics. Besides, it can also avoid the conflict of interest for prescribers and ensure good practice in dispensing [21]. However, separation prescribing and dispensing are not supported by the general public in Hong Kong at the moment as most of the patients prefer to get the medicine from doctors immediately.

INCREASE IN SUPPLY CHAIN AND LOGISTICS INVOLVEMENT

Medicine supply chain and logistics practice is one of the important aspects in dealing with medicine wastage. Increasing logistic involvement to deliver new medicines and collect unused medicines regularly may help to manage medicine waste effectively, as logistic companies can help to return excessive medicines and avoid medicine waste. According to research participants' information, some NGOs will recycle medicine and redistribute it. However, patients may be concerned with the source. Therefore, some community pharmacies will check the medicines' condition before redistribution. It is suggested that the Hong Kong government can utilize licensed Logistics Service Providers (LSPs) to sell, store, and distribute medicines to private clinics and NGOs to reduce wastage.

RECOMMENDATIONS

Education is seen as a crucial strategy to minimize medication waste [1]. It will be helpful to increase private doctors' awareness of medicine waste as one of the main sources of medical waste is the private clinics. Behavioral change is necessary for doctors and patients to assume the responsibility for a sustainable healthcare system. Besides, prior research indicated that shared decision making between prescribers and patients can reduce polypharmacy and tailor medicines to patients' individual needs. It can help to alleviate the existing problem.

The Hong Kong Government could arrange a regular medicine recycling program for private clinics and private doctors. Allowing them to pass unused or expired medicines to the public hospitals for centralized treatment to prevent improper disposal and avoid health problems [19]. This can reduce inappropriate disposal of medicine waste by private clinics, for instance, flushing medicines down the toilet.

CONCLUSION

Medicine wastage has become a serious problem in Hong Kong. The objective of the study is to identify the causes of medicine wastage in private clinics from the private doctors' perspective, and to recommend appropriate policies to address the problems. In this study, qualitative research using in-depth interviews with private clinic doctors was conducted. The study revealed that medicine wastage is mainly due to inefficient operation mode and improper medicine handling practices of private clinics. If the problem cannot alleviate, it will affect population health and environment of Hong Kong for the long run. Research participants gave their opinions about measures to reduce medicine wastage in private healthcare sector, including separation of prescribing and dispensing of medicines and increase in logistic involvement. It is recommended that the Hong Kong government should arouse the private doctors' awareness of medicine waste through education and setup a regular medicine recycling program for private clinics.

The main limitation of this study is that it relied solely on a qualitative approach to gather information. Future research using an empirical method, such as a survey with a larger sample size, could be conducted to investigate the various factors impacting medicine wastage in private clinics. Overall, the study provides a solid foundation for practitioners and governments to develop appropriate policies and measures to address the issue of medical waste in the private clinic.

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