

Drug Shortage: Causes and Outcomes

Xuejun Yu*

Department of Pharmacy, Shandong University, Jinan, Shandong Province, People's Republic of China

*Corresponding author: Xuejun Yu, Department of Pharmacy, Shandong University, Jinan, Shandong Province, People's Republic of China, E-mail: yu@xue.edu.cn

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Description

Medicine shortages are a global problem that affects low, middle and high income countries. Many countries have formulated various strategies to overcome this problem, and this problem is accelerating and affecting the world. All types of drugs, such as basic life-saving drugs, tumor drugs, antibacterial drugs, pain relievers, opioids, cardiovascular drugs, radiopharmaceuticals, and injectable products, are prone to shortages. Among all pharmaceutical dosage forms, the risk of shortage of sterile injections is greater than that of other dosage forms. There are many reasons for the shortage, including supply problems, demand problems, and regulatory problems. Supply issues include manufacturing issues, unavailability of raw materials, logistics issues, and business issues. In contrast, demand issues include timely inventory, increased product demand, seasonal demand, and unpredictable demand. For regulatory issues, an important factor is the lack of a unified definition of drug shortages. The shortage of medicines affects all stakeholders from economic, clinical and humanistic aspects. World Health Organisation has formulated a global mitigation strategy at four levels to overcome global drug shortage. It includes solutions to address current shortages, operational improvements that reduce the risk of shortages and achieve early warning, changes in government policies, and education and training on shortage management for all healthcare professionals.

Drugs are an important part of medical care, which can improve the health and quality of life of patients. In modern times, with the advancement of manufacturing, distribution, and transportation technologies, it is expected that the shortage of medicines will no longer be a problem, and the supply will be resolved soon without negatively affecting the health and quality of life of patients. Unfortunately, this is not the case. In recent years, drug shortages have been described as an increasingly serious global problem.

There are multiple definitions of drug shortages, often referred to as "drug shortages." The University of Utah Drug Information Service Centre defines a shortage as "a supply problem that affects the way pharmacies prepare and distribute

products, or affects patient care when prescribers must choose alternative therapies because of supply problems". The US Food and Drug Administration (FDA) define a drug shortage as "a period of time in which the demand or expected demand for a drug exceeds the supply of the drug". Although the definition is slightly different, if the patient needs treatment, for whatever reason, the patient either does not receive treatment, or chooses an alternative treatment, delays treatment or tries to get treatment through other channels, which brings some difficulties. However, if a manufacturer has supply problems, it will often lead to a national drug shortage, especially if the manufacturer is the only source of drugs or has a large market share. However, due to the different distribution of products in the United States, specific shortages are unlikely to occur at the same rate across the country at the same time. Once shortages begin, it is not uncommon for the healthcare system to order more quantities than usual, because in a shortage situation it is almost impossible to know when additional supplies can be provided again. According to data from the 2011 American Hospital Association survey, 85% of hospitals purchase excess inventory to cope with shortages. This over order can prolong the duration of the shortage across the country, as manufacturers attempt to liquidate a large number of out-of-order trades after their production lines are resumed again. Over ordering also means that some hospitals may have unnecessarily large inventories, while other hospitals may not be able to source products.

The fact that further complicates the problem is that there are very few cases in which a certain drug is not fully available. A typical shortage situation is that buyers can get some products, but not enough to meet the needs of daily use. Healthcare organizations can choose to manage these situations in a number of ways. One way is to continue using the product until the consumables are used up. However, the most common method is to allocate or distribute the remaining product for a specific clinical situation or a specific patient group (the alternative is not ideal). The rationing decision, coupled with differences in the types of patients being treated, may lead to local differences.