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Supply of Medications for Disaster-Displaced Individuals

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Abstract

It is essential for patients to bring their medication and other healthcare items with them when they leave their homes during an evacuation because medication loss is a major issue in disaster settings. This article is based on a systematic review of the literature on medication loss. The goal of this review was to find out how much medication is lost, what it means, how much work it takes to get prescriptions filled and how to be better prepared. The review revealed that the medical relief teams are significantly burdened by the loss of medications, prescriptions and medical aids. Drugs are not the only medical aids; routine medications, medical and allergy records, devices for specific care and daily life and emergency medications are also included. A personal emergency pack that people can carry with them at all times is one possible solution. Stakeholders, particularly health professionals, need to be actively involved in the preparation plans in order to guarantee that patients are adequately prepared. We are now taking actions to spread our findings, such as presenting at conferences and through posters, in order to raise awareness among patients and healthcare professionals because our findings have little impact on disaster risk reduction unless shared widely. Our findings were presented at the Evidence Aid Symposium on September 20, 2014, in Hyderabad, India, as part of these activities.

Keywords: Medication • Drug • Emergency • Preparedness

Introduction

A few studies have examined the emergence and impact of trust in supply chain decision making using multiagent simulation models. The ability of a supplier to provide the promised quantity of product within the promised time interval is the definition of trust used in these papers, which is similar to ours. They observed that trust-based relationships flourish when honesty and communication are present. Sen and co. created adaptive budgeted multi-armed bandit algorithms to manage the budget for supplier exploration and estimation while also distinguishing between suppliers of varying trustworthiness. The fact that they only investigate the trustor's behavior, i.e., how agents trust others, is a common feature of these types of research [1]. In contrast, we investigate the interaction between trustee agents and trustor agents because of the joint adaptation of decision makers' behaviors in a supply chain setting. To reason about the actions of other agents in the supply chain, our supply chain agents also have a ToM capability. The inclusion of disruptions, which add complexity and realism to the study of trust dynamics in supply chains, is another significant distinction of our research.

Description

Some expiry incidents appear to be the result of poor coordination. Through effective coordination between key stakeholders, for instance, expiry as a result of a change in treatment policy and duplicate procurement can be avoided. Even though Uganda's Ministry of Health established a task force to plan the phasing out of chloroquine and sulfadoxine/pyrimethamine, the expiration of large stocks of the latter indicates a serious lack of coordination. In order to prevent the entry of phased-out medicines into the market well before the change is implemented, countries pursuing similar endeavors should involve their national medicine regulatory agencies at all stages of the transition process. In addition, the "pull" system of medicine supply utilized by Uganda's National Medical Stores relies on strict coordination between suppliers and their customers to ensure that the supplier's anticipated turnover remains in line with its customers' consumption [2]. In a similar vein, better coordination between government projects or vertical programs and public medical stores can alleviate the issue of overstocking caused by duplicate procurement and align medicine quantification with consumer prescribing practices and preferences to ensure that procurement matches turnover. This can be accomplished by involving prescribers in the process of determining the scope and quantities of supplies, as well as by, for instance, conducting surveys regarding consumer tastes and preferences to determine the most effective dosage forms.

Most medicines are prone to expiration if their turnover is slow and unpredictable. The standard strategy of ordering economical quantities in order to maximize stock levels is inappropriate for medicines with erratic demand because it only works for medicines with steady consumption [3]. The best way to prevent these medicines from going bad is to keep an eye on your inventory and keep minimum stock levels. Even though strong international guidelines for the donation of medicines have been in place since 1996, it is up to national medicine regulatory authorities to take charge and make sure that they are followed in their own country [4].

We model a pharmaceutical supply chain with three levels in our simulations:distributors, manufacturers and health centersHealth centers provide one unit of product to satisfy each unit of patient demand at each time step. Products are purchased by health centers from distributors. In a similar vein, distributors order products from manufacturers. Manufacturers select a quantity to produce in each time step based on distributor orders. Between placing orders and receiving them, there is a lead time of a predetermined number of weeks to account for product manufacturing, processing and shipping. Each agent will incur a specific inventory cost per unit in each time step for each unit of undistributed inventory [5].

Conclusion

Similarly, a backlog cost will be incurred for each unit of unmet demand in each time step if agents are unable to fulfill their customers' orders (from distributor/healthcenter agents) or demand (from patients). Any demand that is not met is added to the backlog so that it can be met in the future; in other words, it will build up.

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Conflict of Interest

There are no conflicts of interest by author.

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