

Accepted Manuscript

An age-based lateral-transshipment policy for perishable items

Maryam Dehghani, Babak Abbasi

PII: S0925-5273(18)30058-6

DOI: [10.1016/j.ijpe.2018.01.028](https://doi.org/10.1016/j.ijpe.2018.01.028)

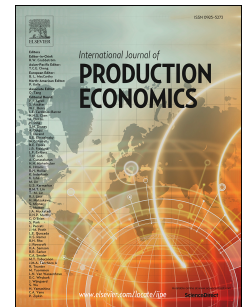
Reference: PROECO 6943

To appear in: *International Journal of Production Economics*

Received Date: 13 January 2017

Revised Date: 22 January 2018

Accepted Date: 26 January 2018



Please cite this article as: Dehghani, M., Abbasi, B., An age-based lateral-transshipment policy for perishable items, *International Journal of Production Economics* (2018), doi: 10.1016/j.ijpe.2018.01.028.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

An Age-based Lateral-transshipment Policy for Perishable Items

Maryam Dehghani, Babak Abbasi¹

School of Business IT and Logistics, RMIT University, Melbourne, VIC 3001, Australia

Abstract

Lateral transshipment is an efficient policy designed to improve the performance of a supply chain. Despite the importance of transshipment for perishable items, few studies consider the issue of perishability. Currently, transshipment in some blood supply chains is based on the age profile of units in hospitals. However, decisions such as the age threshold are made empirically and are fixed for all hospitals. In this paper, we propose a new transshipment policy for perishable items based on the age of the oldest item in the system to improve supply-chain performance. The proposed model has applications for transshipping blood units between hospitals. We develop a heuristic solution using partial differential equations to compute performance measures and cost function. The results demonstrate that our transshipment policy is effective under various circumstances such as lost sale and backordering. We also compare the performance of the suggested transshipment policy to the transshipment policy that is currently practiced in some Australian hospitals (which is an aged based proactive transshipment policy with an empirically set threshold). The results demonstrate that by setting the optimal threshold, hospitals could transfuse units with the same average age of the current policy, while reducing their total inventory cost by approximately 61%.

keyword

Blood Supply Chain; Perishable Inventory; Lateral Transshipment.

¹ Corresponding author: babak.abbasi@rmit.edu.au

Download English Version:

<https://daneshyari.com/en/article/7355229>

Download Persian Version:

<https://daneshyari.com/article/7355229>

[Daneshyari.com](https://daneshyari.com)