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Analysis of logistic cooperative schemes in health care networks: case of inventory centralization^{*}

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Abstract

Nowadays, health care providers are competing in a consumer market under financial pressure and resources shortage. Thus, hospitals begin to form networks and develop more logistic cooperation between them in order to maximize the output/throughput. In this paper, we study the case of the centralization of medical supplies in a French health care network. We analyze the potential gains of such cooperative scheme through multi criteria optimization approach associated to an integrated inventory- location- allocation problem in order to choose the 'best' consolidation configuration. We suggest a procedure of three steps to solve the whole problem.

Key words: health care network, cooperation, inventory centralization, multi criteria optimization.

1 Introduction

Over the last decade, the French health care sector has been submitted to a huge reshuffle of its organizations especially because of the new funding system based on a policy of a prospective payment. The new governance aims at improving the hospital performance and using resources more efficiently [1]. Stimulated by the three ordinances of 1996, the actual health care scene in France tends to be more and more reticular with the emergence of the concept of "health care network". This new concept can be defined as the gathering of many health care establishments (public/private) under the aegis of relations of cooperation which concern different aspects of the health care production process [2]. Indeed, the development of TIC encourage health care establishments to join collective actions based on (material and personal) resources sharing in order to rationalize expenses, reduce overlaps, process fragmentation and improve the efficiency and the coherence of the health care system. So, each health care establishment can be seen as "a node of contracts" and becomes an economic unity of coordination trying to achieve a set of common aims with the other members of the health care network [3].

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