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# Municipal consortia for medicine procurement: impact on the stock-out and budget

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## ABSTRACT

The study evaluated the impact of the consortia on the budget and shortage of medicines for the basic pharmaceutical assistance component in Indaial municipality, Southern Brazil. The number of items with a stock out for at least one day decreased by 12% from 2008 to 2007 and 48% from 2009 to 2007; total costs decreased by 33%, when comparing procurement by consortia (2009) to municipal procurement (2007), and by 18% when compared to the average values of the 2009 Health Prices Database from the Ministry of Health. The procurement of medicines by the consortia decreased stock outs and represented an economy of scale, allowing for the procurement of a greater quantity of products with the same budget.

**DESCRIPTORS:** Pharmaceutical Preparations. Drug Price. Competitive Bidding. Health Consortia. Pharmaceutical Services, economics.

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## INTRODUCTION

The decentralization of health policy in Brazil caused a significant increase in the amount of activities and participation of municipalities in the provision of health services. There was a new reality for many municipalities, such as a lack of human and financial resources, difficulty to access and use technologies and lack of adequate physical infrastructure.

Given these difficulties, consortiums in the health field encountered favorable conditions to develop, especially in small scale municipalities. They could resolve limitations of the regionalization process in medium complexity care, provision of specialty medical consultations, diagnosis and therapy.<sup>2,3</sup>

According to the decentralization process of the Sistema Único de Saúde (SUS – National Unified Health System), procurement of essential medicines became a municipal responsibility, along with the inherent difficulties in operationalization. Also, despite finite public financing, medicine costs have increased over the years.<sup>5</sup>

In 2008, the municipalities of the Association of Municipalities of the Itajaí Middle Valley (AMMVI) in Santa Catarina state, Southern Brazil, began to use the Intermunicipal Health Consortium (CIS-AMMVI) for medicine procurement. This new procurement model sought to reduce operational costs for municipalities, as well as to secure lower prices.

This study aimed to analyze the impact, of medicines procurement by the CIS-AMMVI consortium, upon stock-outs and cost of medicines in the Basic Pharmaceutical Assistance component.

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## METHODS

The retrospective study in Indaial municipality, Southern Brazil, from 2007 to 2009 was based on document research. Documents from the competitive bids during the period were utilized to identify the medicines procured, quantities, per unit price, bidding process and frequency of purchases.

Comparisons of costs and stock-outs were performed with a sample of medicines from the Municipal Medicine Reports. The medicines common to the three lists during the study period were used to classify the items on ABC and PQR curves. The former consisted of three groups of medicines according to the value of demand in a period (economic point of view); and the latter concerned the frequency of usage of the items (popularity classification). The sample consisted of 38 medicines from classes A and P.

The impact on stock outs was obtained through a survey of medicines that were missing at any point.

The per unit cost of medicines procured through solicitations in 2007 (without consortium), 2008 (mixed) and 2009 (consortium) were compared to the percent difference per unit; the percent of items with decrease, increase or no change in cost per unit; and the average cost of the Health Prices Database/Ministry of Health (BPS/MS) in 2009.

The impact on costs from procurement was obtained by the estimate of the total procurement cost for the sample, using average annual consumption multiplied by per unit cost for each year and BPS/MS 2009.

## RESULTS

In regards to the number of items with stock-outs for at least one day, there was a decrease of approximately 12.0% in 2008 in relation to 2007 and of 48.0% in 2009 in relation to 2007. The number of medicines unavailable for more than 90 days was 11 (2007), three (2008) and two (2009).

Per unit prices paid in 2008 for the procurement of medicines, already under the influence of the consortium, were systematically lower than in 2007 (63% of items). Per unit prices in 2009, with medicine procurement by consortium, decreased in comparison to the 2007 price for 76% of items.

Despite the increased unit cost of some items, the total cost of procurement of medicines by consortium, considering the prices obtained in 2007, 2008, 2009 and BPS/MS 2009, would be R\$ 302,962.00, R\$ 247,734.62, R\$ 203,022.32 and R\$ 247,148.44, respectively.

## DISCUSSION

Participation in the consortium for procurement of medicines allowed for reduced costs, thereby guaranteeing greater supply of medicines and less stock-outs in the Basic Pharmaceutical Assistance component.

In regards to stock-out, there were decreases in the average days each medicine was lacking and in the number of items missing, which had a positive impact on the management of medicines in the municipality.

The reduction can be explained, in part, by the new consortium purchasing mechanism that increases pharmacists management of the process, including the ability to issue and send purchase orders to the provider, whereas before this was performed by a purchasing section. Another advantage is the contract model involving registration of prices, with a quote valid for a period of 12 months. The price registration helps to anticipate demand and better ration the available budget at the start of the contract and not at the beginning of the solicitation. This model also reduces the number of bidding processes, allowing reduced prices by economies of scale; increases flexibility in the procurement process, with increased speed to contract; and allows for physical stocks to be reduced.

The prices of medicines tend to decrease with economies of scale and bargaining power increases with greater volumes negotiated. According to Ferraes & Cordoni Junior,<sup>1</sup> the Paraná State Health Consortium was a management decision that provided an economy of scale and competitive prices.

Our calculations were performed with 38 items, for one municipality with approximately 50 thousand residents. In practice, the decreased costs could be even greater when calculated as a percent: a 33% reduction in total procurement costs when comparing purchase by consortium (2009) to municipal purchase (2007), and an 18% reduction in the total procurement cost by consortium (2009) in relation to the average prices of the BPS/MS 2009.

Municipalities that do not use consortium for medicines procurement had some advantages, which can be attributed to municipal purchases. These include: change of the bidding process on prices to an electronic auction; utilization of the price registry system; application of permitted sanctions when contracts are not fulfilled; and greater autonomy for pharmacists to issue and send purchase orders. These modifications probably do not lead to economies of scale seen in consortium but can provide greater flexibility in medicine procurement.

According to Reis & Perini,<sup>4</sup> it is essential to incorporate modern concepts of material logistics in order to avoid stock-outs of medicines due to internal factors, such as inadequate planning or inefficient management

tools. In addition, it is necessary to consider medicines as a distinguished input during the bidding process. Their absence compromises health services and discredits municipal health management.

Adherence to the consortium allowed for cost savings and more regular supply of medicines. Also, smaller

municipalities could benefit from the purchasing power and administrative infrastructure of this form of organization, freeing several municipalities in the same region from the medicines bidding process. Municipal consortium for the procurement of medicines can be an important tool to improve the management of pharmaceutical assistance.

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The authors declare no conflicts of interests.