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Procurement strategies in the health sector – How advanced are procurement processes in Portuguese hospitals

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Abstract

Applying advanced strategies for procurement can save hospitals substantial amounts of money. Many different strategies exist which fulfil different aims. Group purchasing organizations, the use of a consignment stock and supplier performance management are especially suited to improve the hospitals' procurement. Based on focus interviews with procurement managers of Portuguese hospitals it became clear that there is enormous room to improve the general way how procurement is done but also the application of the three strategies mentioned. Given the overall importance of hospital logistics, the hospitals' performance could make substantial progress when improving the hospitals' procurement processes.

Keywords: Hospital procurement, consignment stock, group purchasing organizations, supplier performance management

1. Introduction and Purpose of the Project

Hospitals all over the world have to face more and more pressure when it comes to their costs. This can be explained by various reasons, like a change in disease patterns, increased taxpayer sensitivity for spending in the health care sector, an increase in costs for supplies and even decreasing healthcare budgets in some countries (Supplyexcellence, 2008).

The role of increasing supply prices is especially strong. Experts predict that expenditure for durable medical equipment will rise by 5% and the prices for nondurable medical products even by 8% in the next years. This is in both cases far above general inflation (Serb, 2004). One factor responsible for that is the emergence of new technology which on the one side increases health care services but on the other side is very costly (Serb, 2004). *"Hospital executives […] see rising supply cost as a critical issue that can make or break hospitals over the next few years"* (Serb, 2004).

Hospital logistics can play an important role in decreasing costs and therefore taking away pressure from the hospitals. Poulin (2003) claims that 30% to 46% of hospital spending are directed to the various logistical activities. Given the fact that procurement is a major part of logistics and therefore the associated costs, the need for an efficient and effective procurement process becomes obvious.

In the case of Portugal the efficiency of the healthcare system lags behind nearly all EU 15 countries, although Portugal spent 8.2% of its GDP in 2000 on healthcare, which is similar to the spending of the other EU 15 countries (The Economist, 2004). Therefore, the room for improvement and optimization is especially large in the health care sector in Portugal. The main advantage of improving the supply chain for hospitals compared to other means of improvement is that it reduces costs for health care without reducing the service

provided to the patient (Jarrett, 2006). Chen (1997) even sees supply chain management as a tool to increase the value added processes and therefore the service level for all customers in the supply chain.

Procurement is one part of the supply chain which is especially important because it has surpassing impact on total costs. Therefore, this paper will focus on that particular part of the supply chain. The primary purpose of this work is to identify world class strategies and best practice examples in the field of hospital purchasing around the world. Furthermore, it is investigated how these strategies or methods are applied in hospitals around Portugal. The hypothesis is that even given the large improvements which happened in Portugal in the last decade, there is still room to increase the efficiency when it comes to hospital logistics and in particular to procurement.

The paper first analyzes the research in this field until now. Thereafter, possible procurement strategies as well as methods to facilitate procurement are named. The most promising are described in depth and supported by best practice examples. Next, the usage of these strategies or methods in Portugal is evaluated. Based on the results recommendations are provided in order to increase the efficiency and effectiveness of hospital procurement in Portugal.

2. Analysis of past research

Past research suggests that compared to other industries (e.g. automotive or retail industry) logistics have gained prominence in the health care sector, and especially in hospitals, only in the last two decades and to a much lower extent than in other industries. However, nowadays many hospital managers have discovered the potential that lies in restructuring the whole supply chain from the manufacturer until the patient as one way to manage budget pressure (Poulin, 2003).

Until now most research in health care logistics has been done in the field of workflow and information systems, but not in the field of procurement (Jarrett, 2006), although procurement is one of the most important elements of logistics. Most researchers agree that this part of the supply chain has especially high potential to save costs due to the relative high amount of purchasing costs in the total hospital budget. Therefore, it is of enormous importance that health care practitioners do develop a clear procurement strategy (Baker, 2009).

Procurement can be understood as: "*The management of the company´s external resources in such a way that supply of goods, services, capabilities and knowledge which are necessary for running, maintaining and managing the company´s primary and support activities is secured at the most favorable conditions"* (Van Weele, 2005). However, it is important to note that the terms procurement, purchasing as well as supply management and logistics management are used interchangeably (Dobler and Burt, 1996).

Until now there has been research in some individual elements of procurement as well as purchasing strategies. Jarrett (2006) examines the applicability of a just in time (JIT) concept in health care. Until now JIT was mainly applied in the manufacturing sector but not in the service sector. Jarrett comes to the conclusion that: "*implementing JIT systems will be critical to the industry gaining control of escalating costs*" (Jarrett, 2006). Kumar (2009) investigates the usage of radio frequency identification (RFID) in the health care supply chain. According to Kumar the RFID technology currently is too expensive for a wide-ranging usage within the health care industry and is therefore not yet adequate to facilitate procurement and supply chain functions. However, due to enormous improvements in technology and therefore also in price, RFID becomes a promising option for the future. In a former paper Kumar (2008) analyzed the role of package design

for hospital purchasing. He clearly states that if procurement staff is better educated they can make use of the benefits which derive from a better collaboration with suppliers.

This paper will connect to the past research by evaluating different strategies for procurement and by examining to what extent they are applied in Portugal.

3. Existing purchasing strategies and methods to facilitate the procurement process

When looking at the following procurement strategies it is important to understand that they are not opposed to each other. Moreover, they even should be understood as complementary. This becomes clear when taking into account how different hospital supplies are in terms of price, size and quantity. They can range from gloves worth less than 50 cent to a pacemaker worth up to €35,000.

It is important to point out that the strategies proposed in the paper are tools to improve the procurement process but can also be seen as vehicles to ameliorate inventory management. However, the author of this paper holds the opinion that all supply chain functions should be seen as interrelated instead of stand alone concepts.

A strategy can be seen as a plan of action in order to achieve a particular goal (Simpson and Weiner 1989). Taking into account the above mentioned definition of procurement, the goal for procurement is to purchase everything necessary with the “most favorable conditions”. Ultimately this means as economic as possible. However, it is important to note that economic is not synonymous for a cheap purchasing price. In the end many factors determine how cheap a purchase really was. Factors like the service level, the lead time, the transportation costs, the communication with the suppliers and the easiness of management all sum up in the end and determine the real costs for the hospital.

To get an overview of the main existing strategies to facilitate procurement, the paper provides a list based on the aim of the strategy:

Reduction of prices and costs: Group Purchasing Organizations, Spend Management and Frame contracts;

Improvement of information flows: Supplier Relationship Management, Kanban and E-Procurement;

Facilitating management: C-Part Management, Consignment Stock, Outsourcing to 3rd Party Logistics Provider, Vendor Managed Inventory and Just in Time;

Improvements in quality: Supplier Performance Management.

However, it is important to note that some strategies can fulfil different aims and that this list does not claim to be complete.

Following, the paper will elaborate three of the above mentioned procurement strategies in more detail. Each strategy is briefly described and the possible advantages as well as disadvantages are named. To provide a more practical approach, a best practice example for each strategy is given. These strategies have been chosen based on their potential to improve hospitals procurement. The potential in terms of financial savings is evaluated as well as the applicability for the hospital industry. However, they serve three different aims, which are in the case of group purchasing organizations to decrease product prices, in the case of consignment stock to facilitate management and in the case of supplier performance management to improve quality.

3.1 Group Purchasing Organizations (GPOs)

Definition

A group purchasing organization (GPO) can be understood as an entity that carries out parts of the procurement process or the whole procurement process for several individual organizations. By combining the individual procurement budgets they are able to

maximize the bargaining power with suppliers and therefore to achieve better conditions. The concept of a GPO is very often applied in the health care industry where several hospitals source some or all parts of their supplies by the use of a GPO.

Possible advantages

The main advantage of GPOs is a financial one which consists of several aspects. Firstly, due to the fact that different procurement budgets are bundled, hospitals increase their bargaining power and therefore can gain more advantageous contractual conditions from suppliers. Secondly, administrative costs can be decreased due to the fact that the process of supplier evaluation, bidding, negotiating and contract management only has to be performed once by the GPO and not by each member individually (Beaulieu and Nollet, 2005). Schneller (2000) argues that contracts managed by a GPO cost around 40% less than those managed by hospitals themselves.

In addition to the financial advantages, Goeser (2003), a manager of a US hospital, points out that GPOs can serve as a platform for clinical improvements on a regional but also national basis by exchanging knowledge among each other. In the case of Goeser a GPO has helped to standardize supplies and as well to decrease the amount of different stock keeping units.

Possible disadvantages

Working with a GPO means to include one more member in the supply chain, what stands in contrast to the goal of keeping the supply chain as lean as possible. Besides that, an on price focused GPO could have dissimilar goals than the rest of the supply chain members and therefore be suboptimal for the whole supply chain. Revealing critical information to other hospitals as well as a loss of autonomy can be seen as disadvantageous too.

Best practice example

When it comes to GPOs it makes little sense to name a single hospital as best practice since the main idea is the collaboration between individual entities. However, it makes sense to name countries where the system of GPO is highly advanced. One country where this is clearly the case are the USA. In the USA the usage of GPOs for hospitals is widespread, leading to many different GPOs which have to compete against each other in order to win over hospital budgets. Exactly this competition makes them highly innovative as well as competitive.

Across different GPOs, hospitals in the USA state that they save around 30% to 40% of procurement costs right from the first year when using a GPO. Taking this to the situation of the "Centro Hospitalar Lisboa Norte" with an annual procurement budget of €30,000,000 they would save €10.5 million each year, resulting in savings of around €8,000 per bed and year. However, it is important to point out that the combined procurement budget of all hospitals in Portugal still would be smaller as the budget of any top 10 GPO in the USA. Therefore, savings based on GPOs in Portugal would be clearly smaller than in the USA.

3.2 Consignment Stock (CS)

Definition

In a consignment contract the goods are stored at the customer but still belong to the supplier. Ownership of the goods is only transferred when the goods are actually used by the hospitals. Therefore, the buyer only has to pay when and only if they are consumed. Additionally, in reality consignment stock (CS) is very often combined with Vendor Managed Inventory (VMI) where the supplier is responsible for keeping the buyer stocked and therefore places the products in the buyer's warehouse autonomously and without a specific order from the buyer (Catena, Grassi, Persona, 2005).

Braglia and Zavanella (2003) argue that a CS policy is especially suited for environments where lead times or market demand vary over time, a situation that often occurs in hospitals.

Possible advantages

The main advantages of a CS policy are a noticeable reduction of management effort as well as a decrease in costs. The cost decrease can be explained due to three different effects. First of all, in a CS policy suppliers can produce and ship goods in a batch size which is optimal for them, they can adapt and optimize their processes in order to create savings which can be shared with the hospitals. Secondly, hospitals can decrease costs of obsolescence (due to expiring products or from the emergence of a new technology) in their inventory when using a CS. By the usage of a CS policy these costs are passed to the seller. Thirdly, a decrease in the purchase price can occur for hospitals. This can be explained by the fact that goods only have to be paid when they are consumed and to the price valid on the day of consumption. In the health care industry prices tend to decrease due to the fact that new and better technologies emerge.

Regarding the facilitation of management the supplier can take over the time consuming management of expiration dates. Furthermore, activities like ordering and inventory management can be passed to the supplier which enables hospitals to allocate management resources to other tasks.

Possible disadvantages

There are three main disadvantages or risks concerning a CS policy. Firstly, a CS policy for hospitals requires a strong increase in collaboration with the CS suppliers. That causes a boost in the amount of data shared, which can be costly. Secondly, a CS warehouse needs to be separated from other warehouses in the hospital, leading to problems of space. Given the fact that many hospitals are very old and are already lacking storage space this

can be a serious obstacle. Finally, when using a CS policy supply chain members tend to forget that the optimization of the whole supply chain is the goal and not local optimization, leading to increased costs for all parties involved.

Best practice example

The most advanced example of consignment stock, which was found during the research for this work, is at the Centro Hospitalar Lisboa Norte, E.P.E,[1] which established the consignment stock process in March 2008 and was already able to create significant savings. In contrast to other hospitals they have a clear rule to decide whether or not to use CS for a product. They determined to use consignment stock for all products which are worth €30,000 and have a usage below 600 units per year.[2] The detailed composition and the evolution since the emergence of the CS process can be seen in appendix 1A.

The main goal for the logistics manager regarding CS was to decrease risk resulting from the danger of obsolescence and risk from running out of stock. Besides this, the hospital profited from various other financial and non-financial benefits like the shift of responsibility for expiration to the suppliers and the decrease in management effort as described above. Financial advantages resulting from the CS policy are threefold. They consist of a decrease in working capital, reduction of obsolescence and decrease in prices. The hospital group uses a CS policy for products with a total value of €4.5 million. Assuming an opportunity cost of 10%, this accounts for savings of €450,000 each year due to a decrease in working capital. Savings due to the elimination of obsolescence are the biggest part and accounted solely in the last 12 months for €748,285 (for a detailed evolution of obsolescence savings see appendix 1A). Last year this hospital group utilized around 800 drug eluting stents, which were worth €1,600 each by the time they came into

[1]Hospital center in Lisbon which consist of Hospital Santa Maria with around 1000 beds and Hospital Pulido Valente with around 300 beds.

[2] This rule applies for pacemakers, products for cardiology, drug eluting stents and defibrillators.

the CS. However, the hospital only had to pay the market price of the date of use which was €900 per product, resulting in savings of around half a million euros.

All in all, this hospital center saved around €1.8 million a year due to CS, which are around €1,400 per bed and year, what is quite impressive given the fact that the CS process only exists since one and a half years.

3.3 Supplier Performance Management (SPM)

Definition

As mentioned above, world class procurement is concerned with the price, the easiness to manage but also with the achieved quality. Especially for hospitals this part is essential. Supplier performance management (SPM) is one way for hospitals to first measure the performance of their suppliers and later on to improve their suppliers step by step, therefore increasing the overall quality. As Gordon (2005) says: “You cannot manage what you do not measure”. For hospitals the primary goal should be to monitor the quality of the deliveries as well as the service level. Since not all suppliers can be monitored a Pareto analysis or an ABC analysis should be conducted in order to decide how many and which suppliers should be measured.

Literature like Gordon (2005), Giannakis (2007) and Saunders (1994) names various methods to evaluate vendors. Possible means are onsite visits, audits, questionnaires, balanced scorecards and the monitoring of key performance indicators (KPI). KPIs are especially interesting for hospitals because they can have a high degree of automation, what results in less extra management effort and costs. When suppliers are monitored it always should be kept in mind that the goal is to go from performance measurement to performance improvement. Therefore, the monitoring should be designed in a way that

clear implications can be drawn upon and results should be communicated to the suppliers in question.

Possible advantages

Companies performing supplier assessment on average noticed a 20% improvement in terms of quality, costs and on-time delivery (Gordon, 2005). Due to the broadening of communication, hospitals also build closer relationships with their suppliers when they engage in SPM, which could facilitate the collaboration in other fields relevant for hospitals, like for example packaging.

Possible disadvantages

In terms of SPM there is no real disadvantage, but there is a substantial risk of spending money without getting results. There are lots of enterprises which measure an enormous part of their suppliers but do not get any reward for it because either the measurements are not appropriate, the results get lost in some desk drawer or the results are poorly communicated to the vendors. Therefore, it is essential to have a well designed system which leads to clear benefits.

Best practice example

During the research it became clear that the strategy of SPM is the least applied from the three described in more detail in this paper. Not one hospital was found that truly deserves to serve as a best practice example.

Turning to different industries, however, provides us various examples where SPM is applied in a way that leads to clear benefits. The automotive industry strongly uses the tool SPM. The German car producer BMW[3], for example, measures KPIs in four different areas (procurement of the supplier, plant logistics of the supplier, quality and the

[3]http://www.bmwgroup.com/d/nav/index.html?http://www.bmwgroup.com/d/0_0_www_bmwgroup_com/verantwortung/leitbild_nachhaltigkeit/lieferantenkette/lieferantenkette.html (accessed September 29).

development of the supplier) which together allow them to get a complete picture about the capabilities of its suppliers. Based on the performance measured through the KPIs, the supplier each year becomes a score which indicates where he stands in comparison with others but also in comparison to his past results. This measurement of suppliers has allowed BMW to evaluate their suppliers based on clear numbers and to draw conclusions which are not based on feelings but on solid facts. The result is a win-win situation for the buyer and the seller.

4. Application of advanced procurement strategies in Portugal

The next part of the paper evaluates to what extent advanced logistical procurement strategies are applied in Portugal. The general role of logistics concepts in procurement are analyzed as well as the application and results of the three concepts analyzed in more depth. In order to assess how advanced hospitals in Portugal are in terms of procurement, seven interviews with logistics or procurement managers have been conducted, representing 14 hospitals and 4236 hospital beds (17% of all hospital beds in Portugal[4]).

4. 1 General role of logistics concepts in procurement

When conducting the interviews with the hospitals, the quality of logistics processes ranged from very advanced hospitals in terms of procurement logistics to hospitals which nearly have no procurement strategy at all. In general, it can be said that there is enormous space to improve the procurement processes in Portuguese hospitals even given the fact that they already improved greatly over the last four to five years. Most of the hospitals interviewed focus their procurement almost completely on tactical as opposed to strategic issues. Out of the 14 hospitals interviewed only four continuously measure the costs resulting from the procurement process and therefore were able to decrease procurement

[4] In 2006 Portugal had 25,078 hospital beds acording to Centros de Saúde e Hospitais.

expenses significantly. A different example is the number of vendors supplying the hospitals and the number of different articles. Only the minority of hospitals knows both numbers exactly. The ones who do were able to decrease the amount of active suppliers as well as active articles tremendously and therefore facilitated management and freed resources.

Of the hospitals interviewed, 64% complained that they have nearly no time for further training in the area of logistics and procurement. However, the hospital which spends most time for further training, namely Hospital Santa Maria with 350 man-hours per year, is clearly the most advanced of the hospitals analyzed in terms of logistics.

During the interviews hospital managers named in consensus the huge amount of changes in hospital structure, political interference and the lack of time to plan and implement procurement strategies as the three most important issues that deter better procurement. The many changes in the structure of hospitals, especially the emergence of hospital centers, have consumed valuable time of logistics departments. Political interference has cut hospitals' flexibility regarding decisions, like for example which GPO to use.

Following, the application of the three procurement strategies chosen for this work will be analyzed in detail.

4.2 Appliance of group purchasing organizations

There have been three main GPO experiences in Portugal, two resulting from public entities, "Serviço de Utilização Comum dos Hospitais" (SUCH) and "Administração Central do Sistema de Saúde" (ACSS); and one from a private initiative by four public hospitals[5] in the north of Portugal. Out of this three only the private initiative can be seen

[5] Hospital Santo António (Porto), Hospital de São João (Porto) , Hospital Distrital Vila Nova de Gaia (Gaia) and Hospital Pedro Hispano (Porto)

as a success story while the others are interesting concepts in theory but failures in practice.

Somos Compras, which is a brand of SUCH, is an entity which started four years ago and is owned to 91% by SUCH and to 9% by three big hospital centers[6] in Lisbon. The aim of Somos Compras initially was to provide all articles to all public hospitals in Portugal. After some failed attempts to supply the hospitals, they decreased their scope to only medical devices. However, none of the procurement managers which were interviewed for this paper believe that they will be able to do so in the next two years. However, as the three big hospital centers are partially owners of Somos, they cannot work with another existing or new GPO, what some hospital managers interviewed really would like to change.

ASCC started as an initiative to centralize the procurement of pharmaceuticals in Portugal. Therefore, they created a catalog with all products and the prices they negotiated for them. However, due to a high degree of bureaucracy involved, they only do a new round of negotiation every three years which results in prices far above the current market prices. None of the procurement managers interviewed are currently buying any products from ASCC.

The third GPO experience in Portugal is an initiative which started through the collaboration of four hospitals in the north of the country. In the first year they only bought one product together but increased their scope of products bought jointly constantly. The difference to the previous examples is that this GPO works without any political pressure or interference at all. Some of the procurement managers in the Lisbon

[6] Centro Hospitalar de Lisboa Ocidental, E.P.E, Centro Hospitalar Lisboa Norte, E.P.E and Centro Hospitalar de Lisboa Central, E.P.E

area which were interviewed stated clearly that they would like to join this initiative but cannot due to political pressure.

4.3 Appliance of consignment stock

Compared with the other two strategies analyzed for this paper, CS is the one which is most applied in Portuguese hospitals (86% of the hospitals interviewed use a CS). The reasons to use CS as well as the products which are used for CS are very much alike for the various hospitals and are to a high degree the ones stated in the theoretical discussion of this topic. Furthermore, all hospitals agree collectively that they save money by using a CS policy. However, only the Centro Hospitalar Lisboa Norte is able to quantify the exact amount, which is around €1.8 million each year (€1,400 per bed and year).

Even given the fact that nearly all hospitals use CS, there is still considerable room for the hospitals to improve. Only 41% of the hospitals are currently satisfied with their CS policy. The main reasons stated for their dissatisfaction were shortcomings in the organization and the design of the CS process as well as lack of automation.

4.4 Appliance of supplier performance management

Only 65% of the hospitals interviewed actually measure some performance and 35% measure nothing at all when it comes to the performance of their suppliers. The hospitals which measure performance nearly completely focus on lead times and quality. None of the interviewed hospitals measure aspects like respond time, easiness to communicate, chance that the supplier fails to deliver or the percentage of bills that are incorrect. Only the Centro Hospitalar Lisboa Norte, E.P.E has a clear structure how they measure and how the results are evaluated. Besides that they found ways how to automate the system in order to decrease the amount of resources needed for SPM.

When asked if they were satisfied with their current capabilities to measure the performance of their suppliers, only 29% of the hospitals stated that they were pleased. Most hospitals which were not satisfied embraced the desire for a system which is well defined and structured but also to a certain degree automated. Nevertheless, the main shortcoming of this strategy in hospitals around Portugal is the fact that only the hospitals Santa Maria and Pulido Valente actually use the results obtained by SPM, whereas the rest spends valuable resources for collecting information, which then gather dust in a drawer.

All in all it can be stated that most hospitals analyzed for this paper do not put much effort into implementing a structured and automated SPM system because they either are too busy with other issues or because they do not think that the benefits are worth the costs.

5. Possible ways to improve hospital procurement in Portugal

The following part of the paper provides recommendations about how the quality of procurement processes in general can be augmented as well as how the application of the three strategies, which were evaluated in depth for this paper, can be enhanced. These recommendations are derived based on the interviews performed, intensive research about the specific Portuguese situation and research about hospital logistics in other countries.

5.1 Improving the general logistics process in hospitals around Portugal

Having enhanced logistics as goal for Portuguese hospitals, procurement managers should be the first to be asked what can be improved. According to them, political interference, excessive changes in structure, lack of time for training and implementation of new strategies are named as the main obstacles for achieving better logistics systems.

When it comes to the issue of structural changes, which consume tremendous amount of management capacity, it is the responsibility of the ministry of health to complete them as soon as possible and to bring a certain level of stability to the hospitals.

Regarding the aspect of political interference, it becomes clear that this is an issue which can only be improved over a long horizon of time. However, giving more independence to the hospitals could be a first step.

Lack of time for training and implementation of procurement strategies might be the issue that can be improved in the shortest horizon of time. Logistics departments of hospitals should be either given extra resources or should be freed from tasks in order to allow them a sufficient level of training in the logistics / procurement area. Suggesting to increase resources might not be a creative solution and might seem unachievable given Portugal's economic situation. However, there is a strong negative correlation between improving the skills of the logistics department and the logistics cost of a hospital. Looking at more advanced hospitals in terms of logistics, which spend sufficient time for further training, it can be said that savings due to improvements in logistics by far outreach the extra costs for training. The hospitals could be provided with extra resources for a certain amount of time, e.g. one or two years, and any further investment could be tied to the performance of the hospitals which could be measured by the usage of KPIs. Examples for these KPIs could be the costs of the procurement process or the logistics costs of the hospital per bed and year.

Another point which can be implemented relatively fast and does not require an enormous amount of resources is to enhance the exchange of knowledge between the hospitals. Only three hospitals stated that they meet on a regular basis in order to exchange information. Furthermore, none of the hospitals interviewed share information or best practice examples with entities outside Portugal. Especially in a highly dynamic area like hospital logistics, which has brought many new improvements in the last five to six years, it can be highly productive to learn and share information with others. The organization of such

knowledge exchange by the ministry of health could be a political interference which would be appreciated by the hospitals.

5.2 Improving the usage of GPOs in hospitals around Portugal

Nearly all managers interviewed stated clearly that they would like to use a GPO for at least some parts of their overall purchases. As named above, the poor performance of existing GPOs and the lack of hospitals' flexibility due to political pressure strongly hinder the usage of GPOs. Regarding the lack of flexibility it is very important to give enough freedom of action to the hospitals. One manager of a big Lisbon based hospital clearly stated that he would join a well functioning GPO in the north but he cannot because he is forced to stick to Somos, which is actually not working yet and probably will not start to work in the near future.

Regarding Somos, the general notion of all people interviewed for this paper is that the idea behind Somos is very good and could bring real advantages to the hospitals. However, the main problem of Somos is the practical implementation of its ideas and goals which is not working at all. During the interviews, two reasons that could explain this became clear. First of all, the structure of Somos, which is mainly public, is way too bureaucratic, and secondly, Somos very often does not understand the needs as well as the characteristics of its customers. This could be changed either by strengthening the ties between Somos and the hospitals or by employing more professionals which have worked for hospitals before. If this succeeded, Somos would be a real option for hospitals. Taking into account the relatively small size of Portugal it would make much more sense to have only one GPO, but a well functioning one.

5.3 Improving the usage of consignment stock in hospitals around Portugal

As named above, the methodology of CS is already applied in the majority of hospitals. However, most managers pointed out that they are unsatisfied with their current process. During the interviews it was revealed that most hospitals have previously designed a consignment stock process which, however, is most of the times not applied in praxis. This ultimately means that either the process is badly designed or it cannot be applied in reality, leading to an unstable system with errors occurring frequently. In both cases it needs to be redesigned in order to make sure it works properly. Before redesigning their processes, best practice examples from other institutions should be studied, which has not been the case until now although a very good best practice example from Centro Hospitalar Lisboa Norte E.P.E. is at hand.

Another issue pointed out during the interviews is the lack of automation. A satisfying degree of automation can only be reached with investments into IT-Systems and hardware. Given the scarce resources in the public health sector a cost-benefit analysis should be conducted for investments and if the benefits outstrip the costs investments should be made. In the long run this will save resources even if the up-front expenses might be high.

5.4 Improving the usage of SPM in hospitals around Portugal

As stated above, the main reason why this strategy is applied to such a low extent is because hospital managers are busy with other things and do not regard the advantages as important enough. This perception could be changed when they would learn from other hospitals what the clear advantages are, how the results of the process can be used and how the system can be implemented in a way that it consumes a minimum of resources and is automated as much as possible. In Portugal, Hospital Santa Maria for example could share their information with other institutions as soon as they have implemented

SPM themselves. This process could be fostered through incentives created for Hospital Santa Maria by e.g. the government. Again communication between the hospitals should play a key role.

6. Conclusion

This work project first analyzed different procurement strategies which are suited to improve logistics in hospitals. Three of them were chosen and analyzed in more depth, namely group purchasing organizations, consignment stock policy and supplier performance management. The discussion of the three strategies is supported by a best practice example for each one. Research has shown that when a GPO is used, between 30% to 40% of the procurement budget[7] can be saved, depending on the size of the GPO. In terms of savings due to CS, the concrete example of Centro Hospitalar Lisboa Norte, E.P.E was described which saves at the moment around €1,400 per bed and year. Furthermore, the improvements in quality are enormous when SPM is applied even if it is not possible to quantify this in terms of concrete savings.

Due to focus interviews the general level of hospital logistics of Portuguese hospitals was evaluated as well as the application of the three strategies mentioned above. The CS policy is the one which is most applied followed by GPO and SPM. When it comes to the general level of advancement it can be said that procurement logistics in Portuguese hospitals suffer from a lack of staff training, political interference and the huge amount of changes in hospitals structures. For each strategy clear suggestions were developed in order to improve the application level in Portugal but also the advantages extracted from the strategies. The hypothesis of this paper is strongly supported by the findings of this work. Even given the large improvements which happened in Portugal in the last decade, there is

[7] Calculating with average procurement costs per bed of €48,000 and with savings of 35% this results in savings per bed and year of €17,000 in the Portuguese case.

still significant room to increase the efficiency when it comes to hospital logistics and in particular to procurement.

One limitation of this work project is the scope of the interviews which mainly focuses on the Lisbon area and on public hospitals. This limitation exists due to the language barrier that sometimes made it impossible to communicate with the hospitals and the time constraint of the work project. Since this paper was restricted in scope the second and main limitation of this project is that although all three strategies and their application in Portugal were analyzed, this analysis could have been done in more depth. Therefore, the author of this paper suggests for further research to analyze the three strategies individually and therefore in more detail in order to provide more concrete findings and to design clear processes for the strategies as well as concrete plans how to implement them in Portuguese hospitals.

The value added by this work is threefold. First of all, the paper points out that the strategies of GPO, CS and SPM are well suited to improve hospital logistics. Secondly, the paper analyzed the procurement landscape in Portuguese hospitals and areas which in particular need to be improved are pointed out. Finally, the paper names actions that can be carried out in order to improve hospital logistics around Portugal.

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7. Appendices A

Appendix 1A: Emergence of value in consignment stock & Evolution of obsolescence savings for Hospital Santa Maria