

Designing an Efficient Hospital Porter System

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ABSTRACT

This paper describes 10 steps necessary to develop a centralized managed porter system. These steps are the outcome of a comparative study of porter operations at two Vancouver area hospitals. The needs for analytical capabilities, feedback, wide input and data collection and analysis are emphasized.

Patient and equipment transport is an important function in hospitals that receives little management attention and is rarely the subject of in-depth study. The importance of this function became evident during a study of CT scanner operations at Vancouver General Hospital (VGH), which observed that one of the key factors affecting efficient use of CT scanners was the delay due to not having patients available for scans or not having patients removed from the scan rooms in a timely fashion due to an unavailability of porters. This is a common situation in hospitals, expensive resources such as CTs, MRIs or operating rooms are blocked or starved due to the unavailability or delay of a less expensive resource such as a porter.

One key recommendation of the CT scanner study is to add a dedicated porter to the scanner operations team who is responsible for bringing in-patients to the diagnostic area for scans and returning patients to their rooms after scans are complete. Another outgrowth of the CT scanner study is follow-up studies of portering operations at VGH and St. Paul's Hospital (SPH). This paper reports the recommendations for developing a centralized porter system at SPH based on our review and comparison of porter operations in the two hospitals. A detailed discussion of our analysis at VGH appears in a companion paper (Chen et al. 2005).

Though there is a huge proliferation of articles and studies regarding healthcare and hospital administration, little attention has been given to porter operations. One such study is Bryan (1998), where porter operations at Queen Elizabeth II Health Sciences Centre, in Halifax, Nova Scotia, were analyzed. Bryan's objective was to design and implement a coherent portering system reflecting the needs of all departments affected by a merger between different health centres. The problem Bryan faced was similar to the one we faced at SPH, and many of the issues raised are reflected in our study as well. Though Bryan does suggest a few tangible recommendations, she mainly provides general insights into issues that should be addressed. In contrast, our paper provides an extensive step-by-step implementation plan for organizing and managing porter operations. Other studies include Dershin and Schaik (1993), Sullivan and Frentzel (1992) and Chow-Chua and Goh (1999).

BACKGROUND

SPH is an acute care, academic and research hospital located in downtown Vancouver. It specializes in cardiac and renal care and HIV/AIDS treatment. With over 500 acute care beds in use and home to many world-class medical and surgical programs, the hospital serves both the local community and patients from across B.C. SPH also has a longstanding history of providing care to disadvantaged populations.

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At SPH, the porter system consists of three centralized porters with most porter services managed and carried out at the ward/unit level by either porters or ward aids. The management challenge was to identify the key issues and requirements to design a coherent centrally managed portering system.

NATURE OF PORTER OPERATIONS

SPH relies heavily on porters to escort patients and materials throughout and between all hospital buildings. Though porters receive some specialized training, they are not responsible for providing any medical support or emergency care. The main focus of porter services is moving patients between different departments within the hospital. In addition, they transport blood products, lab specimens, X-ray results, wheelchairs, stretchers and charts from one location to another as needed. Occasionally, they are requested to move other equipment and objects. At busy times, other workers, such as nurses and ward staff, may be called upon to perform porter services to avoid delays for urgent cases.

One of the biggest challenges SPH faced was the lack of formal and consistent job descriptions for porters. As a result, staff assigned as porters for various wards and units had different expectations and duties. Both "ward aids" and "porters" were expected to perform portering services. The porter service was managed locally at the discretion of each unit, and each unit was assigned a porter or porter contact. When a unit required porter services, they contacted that person directly and made the logistical arrangements. The process and decision-making varied widely.

SPH also had one centralized porter serving all units 24 hours a day to provide additional assistance. When a unit required the services of the central porter, they paged him/her directly. The porter then called back to make arrangements on a first

come first serve basis.

Due to high volumes, the radiology department had several porters and a local dispatch centre. When a movement at the radiology department was required, the designated dispatcher sought out an available porter and handed him or her a slip with information regarding the job. After a porter completed the job he or she returned to the radiology department so that the “dispatcher” could see that he or she was available.

CHALLENGES

The greatest challenges to the porter system resulted from the absence of a centralized management system. Most porters were managed by individual departments, and job assignment rules, tasks, workloads and priorities differed greatly across the hospital. The centralized porter and porters that served multiple units were often unclear about their responsibilities. In addition, users, including the nurses and unit heads, were unclear about which porter they should call for which job type. On some occasions, both wards and diagnostic areas would contact different porters for the same job. Also, due to a lack of communication between diagnostic areas and wards, trips were sometimes cancelled or the porters would arrive with wrong equipment.

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Scheduling and prioritizing was not done systematically. SPH did not have a system in place to determine the priority of different patient or material moves. The porters that served several units would receive the requests and prioritize the jobs themselves. Appointment times were often not known and consequently often not met. As a result, low priority jobs could end up being served ahead of more urgent jobs resulting in patients waiting long periods of time for porters and consequently delaying medical or diagnostic procedures.

At the time of the study, no standards or performance measurements were in place. Furthermore, there were little or no data available regarding movement volumes, transport times or delays. There was little opportunity for users to provide suggestions or present issues regarding the performance of porter services or for porters to provide feedback to units. In addition, as a consequence of SPH being an older facility, hallways and elevators were often crowded making patient movements difficult.

STUDY APPROACH

One of the biggest challenges the study team faced was that the study began shortly after a job action by the union representing the porters. Though the job action was resolved, there still remained some hostility and skepticism towards management and in particular with regards to projects entitled “assessing the efficiency of porter operations.” Since the success of the study would rely on the cooperation and support of the porters, dispatchers and porter managers, it was crucial for the team to gain their confidence and trust. By working closely with managers to clearly explain the objectives of the study and actively seek input from the porters, the team was able to overcome the challenge and gain their confidence. Once the porters trusted the team, they were extremely supportive of the study, cooperated at all levels and were interested to hear about the study outcomes.

The study team conducted a series of meetings and interviews with management, porters and user groups. In addition, team members followed porters as they carried out their activities to gain a better understanding of the portering process and insight into potential bottlenecks. At the time of the study, SPH did not have a system in place to capture trip volume or times, and as a consequence there was no opportunity to do a statistical analysis regarding movement times and demand distributions.

To compensate for the lack of data, the team, together with management, designed data collection forms, which were distributed to departments that were heavy users of porter services. Though the data collected did provide some insight regarding peak periods of demand, it was not sufficiently detailed to provide clear recommendations. However, one major benefit with the data collection exercise was that it gave management a better appreciation of what data is needed to better evaluate the system and therefore provided a basis for a future potential data collection system.

RECOMMENDATIONS

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We provided SPH management with a step-by-step series of recommendations to design and manage the porter system. While these were developed specifically for SPH, we believe they apply to any hospital striving to develop an efficient porter system and interested in adopting a modeling approach similar to that which we used in our more in-depth study at VGH (Chen et al. 2005). These steps should be implemented before an in-depth quantitative study of porter operations can be carried out.

1. Define and clarify the roles and responsibilities of porters and ward aids. Clear job descriptions eliminate confusion and clarify the roles of these staff members. A hospital-wide understanding of what porters are responsible for would likely result in increased porter morale and improved patient flow.
2. Develop a system to assign job priorities. Due to the limited capacity of porters, a priority system is necessary to insure that urgent trips have precedence when a queue for patient or non-patient movements builds up. It is essential that any established priority system be decided and communicated on a hospital-wide basis and is created with input from all parties affected.
3. Establish clear processes and communication guides for porter requests.
4. Identify and collect time stamps in the porter movement process. Proper tracking of these time stamps enable management to track system effectiveness, monitor porter performance and identify where bottlenecks occur. These time stamps also are the basis for system performance metrics.
5. Establish performance metrics, response targets and performance standards by priority. After establishing a priority system for different patient/non-patient moves, users need to be aware of targets and standards to be expected (e.g., what is the maximum time a unit should have to wait until a porter is dispatched, arrives at the ward and finishes a job). These performance measurements must be communicated hospital wide.

6. Establish a system for monitoring and evaluating performance. Once the performance metrics, targets and standards have been established, it is crucial that management follows up and monitors performance and provides managers and users with an analysis and summary of this information.
7. Establish a feedback system. Creating a feedback system, through such methods as user meetings, surveys, monthly memos and postings on internal Web sites will result in fewer complaints and more of a “team” attitude towards porter services. An effective feedback loop will allow all parties to express their concerns while creating a forum to communally address problems and find solutions. Feedback can be both qualitative (i.e., rude behaviour noticed from porter), or it can be quantitative (i.e., 50% of the time the porters are usually 10 minutes late). The reporting of performance data will provide porters, managers and users with an improved communication forum.
8. Collect data. SPH needs to implement a data collection method to improve the ability of management to track and analyze the porter system. As different departments have different requirements, it is important that users and porter managers work to establish data collection formats that meet a variety of needs. Manual data collection can be the first step; however, implementation of an electronic data entry method should be the end goal for SPH to make data analysis a much less time consuming process. Data collection protocols must be established in a fashion that supports any implemented standards and metrics.
9. Determine system structure. SPH needs to determine a consistent structure for porter operations on a hospital-wide basis. Our research suggests that a hybrid system will work best in which heavy volume departments still have their own porters during peak times, but a majority of porters would be managed and assigned through a central dispatch. In this situation, a manager could have control over porter operations and porters could be more effectively scheduled and managed to meet demand in different departments. A computer simulation model would enable SPH to review various scenarios and determine what the best system structure should be.
10. Investigate implementation of automated dispatch system. The use of a dispatcher and a dispatching support system could greatly increase the organization and efficiency of porter operations. Several automated or semi-automated dispatching software programs use pre-programmed methodology to dispatch porters for jobs and track and record patient movement. Such software programs are also useful for recording and storing data. However, it is important to emphasize that, prior to investing in or developing such a system, the above steps must be implemented. A software package is only a support tool to assist the implementation of a new structure and not a solution by itself.

OUTCOMES

Our study and implementation plan has resulted in a formal review plan of portering organization and process. Our recommendations have provided the basis for discussion among management, user groups, porter staff and external parties of how the future porter operations should be handled. Though the transition to improved porter services is currently underway, there have not been any formal solutions implemented.

One of the crucial insights from this study was the importance of good communications. The most frequent reason behind bottlenecks and inefficiencies stemmed from poor lines of communication. For a porter system to work, it is essential that correct and timely information be available to all parties involved. In addition, it is important that well-designed feedback systems be in place. The objective is to get everyone to understand the process from a hospital-wide perspective and work together, ultimately, to improve healthcare services.

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One of the key lessons learned was that to carry out studies such as these requires buy-in at all levels within the organization. Porters were concerned about job security, units were concerned about losing dedicated personnel and management required unbiased recommendations. By involving all stakeholders at all stages of the process, results were well-received and successfully implemented. **Q**

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