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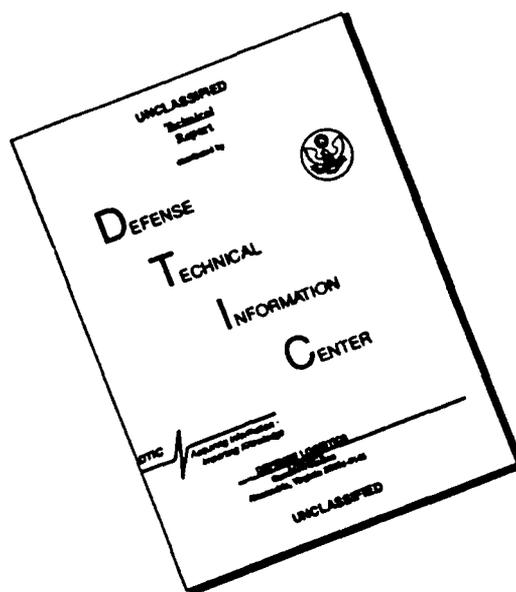
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13. ABSTRACT (Maximum 200 words) Walter Reed Army Medical Center (WRAMC) is the world's largest military tertiary healthcare treatment facility. Due to its broad patient care mission, the organization requires patients and material to be transported frequently. Since 1990, WRAMC's transport needs have been examined twice. Some transport problems have been resolved because of these analyses. However a comprehensive plan for a Patient Transport Team (PTT) has not been developed. This Graduate Management Project (GMP) designs a PTT to meet the needs of WRAMC's stakeholders. The techniques utilized in this GMP were personal interview, literature review, and site visits to existing PTTs. This PTT design includes areas such as staffing, equipment, education, communication, and scope of service. These five aspects of a PTT are interactive. The PTT for WRAMC discussed herein includes these components in a framework that has centralized and decentralized aspects.					
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A PATIENT TRANSPORT TEAM FOR WALTER REED ARMY MEDICAL
CENTER: DESIGN RECOMMENDATION

A Graduate Management Project
Submitted to the Faculty of
Baylor University
In Partial Fulfillment of the
Requirements for the Degree
of
Master of Healthcare Administration
by
Captain Michael W. Neft, AN
June, 1993

Running head: IN-HOUSE PATIENT TRANSPORT TEAMS

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ABSTRACT

Walter Reed Army Medical Center (WRAMC) is the world's largest military tertiary care health treatment facility with 830 beds, expandable to 1275 beds during a national crisis. The mission of WRAMC is complex and all encompassing. Due to this complicated mission, patients must be moved to and from a variety of places for diagnostic and treatment purposes. Additionally, patient related material, such as paperwork and pharmaceuticals, must be transported throughout the organization. Since 1990, WRAMC's patient transport needs have been examined twice. Some transport problems have been resolved because of these analyses. However, a comprehensive plan for a Patient Transport Team (PTT) has not been developed. This Graduate Management Project (GMP) designs a PTT to meet the needs of WRAMC's key stakeholders. The techniques utilized in this GMP were personal interview, literature review, and site visits to existing PTTs. Through these techniques, the needs of WRAMC's stakeholders, and current patient transport practice in the community have been discerned.

Walter Reed Army Medical Center's PTT should have

centralized and decentralized components. Both components will be responsible for patient movement. Material movement will fall under the decentralized aspect. Some key areas that effect the team are staffing, equipment, education, communication, and sope of service. These five interactive elements must be taken into account in the development of a responsive PTT.

This GMP addresses all five interactive pieces of a PTT. Staffing recommendations developed in the past should be adopted. A separate manager, as well as dispatcher, for the team are needed in addition to the transporters. The PTT should provide wheelchairs and stretchers for the patients it transports. In addition, each patient care area should have a few pieces of transport equipment for its own intraunit transport needs. Repair of transport devices should be the responsibility of medical maintenance. The transporters should be educated regarding established functions of the team, how to execute these functions, and pertinent trans-WRAMC policies (e.g. fire, safety, and occupational health issues). These educational endeavors should primarily be undertaken in a

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preceptorship-style orientation program. Hand-held radios should be utilized to facilitate two-way communication between transporters and dispatchers. Efficient two-way communication is necessary so transporters do not waste time phoning dispatchers or travelling to the PTT office to receive assignments. The scope of service the transporters will provide includes both patient and material transport. Milestones have been established to assist in achieving service delivery goals.

*Disclaimer: The use of male pronouns (he, his) throughout this project does not refer to a particular gender, nor does it express a sexist attitude on the part of the author.

TABLE OF CONTENTS

Abstract.....2
Introduction.....7
 Conditions Which Prompted the Study.....7
 Problem Statement.....9
 Literature Review.....9
Purpose.....34
Methods and Procedures.....36
Discussion.....41
 Army Medical Centers.....41
 Civilian Patient Transport Teams Which Do
 Not Meet Organizational Needs.....46
 Transport Teams Which are Organized to Meet
 the Organization's Needs.....47
 Needs of Walter Reed Army Medical Center's
 Stakeholders.....58
Conclusions.....61
Recommendations.....62
 Design.....62
 Communication.....65
 Milestones.....67
 Staffing Issues.....69
References.....74

Patient Transport

6

Appendix A.....77
Appendix B.....80
Appendix C.....81
Appendix D.....82

INTRODUCTION

Conditions Which Prompted the Study

The need for a Patient Transport Team (PTT) was established by a Department of Nursing (DON) study conducted by the former Nurse Methods Analyst (NMA) in early 1990 (Smith, 1990). This study focused on the need to transport patients to and from inpatient wards, the Emergency Room (ER), and select clinics throughout the hospital. The project demonstrated the need for 1,403 transports per five day work week. A time-in-motion study demonstrated that the average time required for a one-way trip was 15 minutes. These figures were used to determine the number of full-time equivalent employees (FTEs) required to implement the team (see Appendix A).

Several areas pertinent to the patient transport question were not addressed in the Smith study. They are: the needs of WRAMC's key stakeholders, the results of a literature review, and how other organizations of a like size and scope of service are meeting patient transport needs?

Since 12 October 1990, DON has been responsible

for the patient transport. A supervisor who is a licensed practical nurse was hired for the team in 1990. Initially, Medical Holding Company personnel staffed the team. They were unreliable because they, themselves were patients. These soldiers may be awaiting a medical board, have many appointments, and physical limitations. As a consequence of these limitations, the Medical Holding Company cannot supply the PTT with a sufficient number of people to fulfill WRAMC's needs. Additionally, Medical Holding Company provides other hospital areas with staff. This limits the number of people available to the PTT. Finally, because the flow of soldiers into the PTT from the Medical Holding Company is so sporadic, it is very difficult to train and orient people (see Appendix B).

Currently, the PTT at WRAMC consists of the supervisor and two full-time employees (these two individuals are "overhires"). These three individuals are unable to meet the patient transport needs of the organization.

Problem Statement

Due to its size and scope of service, WRAMC needs patients to be transported throughout the facility, primarily for diagnostic testing and the performance of treatments. There is also a need for the transportation of materials pertinent to the patient. These materials include equipment used for patient treatments, lab specimens, medical records, X-rays, and lab reports; other materials may be added to this list as they become apparent. The management problem is that the present PTT at WRAMC cannot meet the needs of the patients and staff.

Literature Review

Introduction

Healthcare has made phenomenal advances in this century. The advent of antibiotics, blood transfusions, cancer treatments, and therapies which increase the survival rates of trauma patients, have significantly increased the acuity of the patient treated in the modern medical center. With this increase in patient acuity, there is an increase in the amount of technology expended. Part of this technology

consists of diagnostic tests and therapeutic modalities. Much testing and treatment of today's hospitalized patient cannot be done at the bedside. This limitation in bedside care requires that the patient be transported to other areas of the hospital for definitive testing and treatment. Materials dealing with the patient need to be transported throughout the institution as well. Blood and body fluids must be moved from the clinics and in-patient units to laboratories for analysis; paperwork charting the patient's progress must be conveyed between different areas; and finally, therapeutic devices such as equipment and drugs must be moved to and from the patient care areas.

The concept of the Patient Transport Team (PTT) that operates within the confines of a hospital is a viable answer to the need for in-house movement of patients and materials. The purpose of this literature review is to investigate the reasons for developing a PTT in further depth, as well as the design and implementation of such a team.

Patient Transport Team Defined

A PTT is a group that consists of human resource assets dedicated to the purpose of transporting patients, and many times materials pertinent to them. Dawkins (1983) cites a hospital that specifically consolidated its transportation employees from several inpatient departments. Once these assets were consolidated, they were more effective in responding to the organization's unique needs. Some institutions may use the PTT solely to transport patients (Navarro, 1992), others may utilize it to deliver materials as well ["fetching and carrying"] (Roberts, 1985, p. 221; Kuhn, 1992). Interestingly, Providence Hospital in Holyoke, Massachusetts developed a PTT that was specifically designed to physically move patients and transport them (Burke, 1982). Providence Hospital's PTT transferred patients from their beds to stretchers with the aid of a special mobilization device. This distinction of physically transferring patients from their beds to a form of locomotion (e.g. wheelchair or stretcher) and transporting them is an important one. The reason why this clarification is vital, is because some organizations have made the decision to only allow

its PTT to *transport*, not *transfer*, the patient's person. Schall (1988) notes that in his hospital, transporters *may* assist with transferring patients, however, it is a secondary duty.

Reasons Why Developing a Patient Transport Team is a Positive Endeavor for a Tertiary Care Facility

Increased Productivity

Healthcare costs are rising continually. Organizations that provide care to patients must constantly strive to contain costs wherever feasible. Cost containment is of the utmost importance if an institution is to remain financially solvent. Saving money is especially difficult in the healthcare industry, because costs rise so rapidly. One way to deal with the problem of needing to save money while still providing quality service to the consumer is to maximize productivity. The utilization of a centralized PTT is one way that some hospitals have increased efficiency and productivity.

Kuhn (1992) relates the anecdote of a hospital that required each area to be responsible for its own patient and materials transport. In effect, this

institution used employees who were hired for other work to act as a transporter as needed. Because transporting was a collateral duty, during peak work hours these employees were unable to meet the challenge of moving a large number of patients, and large quantities of material. Consequently, "Clinicians, nurses, therapists, management and other high-paid professionals became the patient transport system (p. 36)." This organization found that if it pooled some of its FTEs that performed patient transport as a collateral duty, and combined them into a single department which had the sole function of providing patient transport, it could save money and perform transport more effectively. The money savings was a result of the highly paid professionals doing the jobs they were hired to do, not providing patient transport. Productivity was increased by having a staff dedicated to moving patients to the appropriate location in a timely fashion. When patient flow is facilitated in such a manner, diagnostic tests and therapeutic regimens can be carried out more calmly and effectively. When material flow such as test results, drugs, and lab specimens is facilitated in such a

manner, many aspects of a patient's illness (e.g. diagnosis and treatment) can be dealt with faster, and more smoothly than when delays and interruptions dominate the situation.

Schall (1992) notes that "an additional benefit" (p. 77) for the institution, is that its high paid professionals are kept doing the jobs they were hired for and not transporting patients. Institutional productivity on a much wider scale is addressed when this reflection is considered. When professionals are not called away from their appointed duties to perform a task that a much less educated and less costly individual is capable of doing, the professionals can expend more effort and energy on the duties they were hired to perform. Human resources need to be utilized to do what they were educated and hired to do, versus being interrupted for duties only peripherally related to their job. When people are employed in such a fashion they will be able to produce more highly skilled work, in a greater volume, for the organization.

When human resource assets are pooled to create a PTT, the goal is increased efficiency. Once the PTT

has been fully activated, efficiency increases that previously had not been conceived of may be realized. Lumsdon (1989) relates how Henry Ford Hospital in Detroit increased its PTT's productivity by introducing automation into the function. The software package that was developed allowed the hospital to track "the number of requests, completed trips, equipment used, individual productivity and efficiency per employee, supply and demand analysis, and time and attendance information by day or night range...reasons for delays such as when...patient is not ready to be escorted (p. 103)." When an organization is as committed to productivity as the Henry Ford Hospital, it will reap some benefits. As a result of instituting the software package FTEs were decreased. Consequently, the transport department's payroll dropped 14.6 % in one year. The department was able to function with less staff because the new software helped to distribute the scheduled work more effectively.

Increased Satisfaction of Key Stakeholders

Blair and Fottler (1990) noted the concept of stakeholder management. A stakeholder is a person or group that has a keen interest in an organization. These stakeholders can exist inside or outside the institution and can significantly influence what happens in the organization. In the case of patient transport, the key stakeholders are the patients and members of the hospital staff who either perform or require transportation services.

Bolling and Duriex (1990) noted an example of a PTT gone awry. This particular PTT existed in a Veterans' Administration Medical Center (VAMC) and was staffed totally by volunteers. None of these volunteers served as dispatcher in the transport office, thus the office was empty much of the time. The office was empty because all of the volunteers functioned as transporters. When a situation like this exists, all key stakeholders are effected. The members of the hospital staff who needed patients transported frequently found the team unresponsive. Consequently, the patient care givers (nurses, technicians, physicians, aides, therapists) functioned as

transporters. These care givers became dissatisfied because they were not doing the work they were educated and hired to do. The patients became dissatisfied because they had to wait for extended periods of time for transport. Kuhn (1992) notes that a PTT contributes to a patients' overall impression of the hospital. A well run PTT demonstrates a commitment to quality service. When an institution stresses quality service, it displays a customer focus. The PTT is a group that patients may get to know quite well during their hospital stay. If the PTT is staffed with caring, competent individuals who take their work seriously and want to do the best possible job for the patient, the hospital will be better known for having a customer focus. If however, as Roberts (1985) notes, the transporter makes thoughtless remarks, or is incompetent, he may become little more than "yet another source of disruption and anxiety (p. 221)." Additionally, patients pick up cues from the care givers that they too, are dissatisfied; consequently patients become even more unhappy. Also, patients see that they must do without care givers because the staff must function as transporters. Finally, the PTT staff

themselves are dissatisfied. They know the transport team is not fulfilling the needs of the organization and they sense resentment from patients and hospital staff. Many times, the PTT staff may well be able to recognize and describe the problem at hand. However, in most organizations it is not realistic to expect a low wage grade employee, such as a transporter, to be able to effect much change in policy.

The Veterans Administration Medical Center that Bolling and Duriex (1990) discussed, performed a study of its PTT, realized the error in not having a dispatcher, and hired a person to fill that role. Once the dispatcher was in place, staff satisfaction with the team increased, and the use of professionals for patient transport decreased.

Sullivan and Frentzel (1992) discuss the creation of a Continuous Quality Improvement (CQI) team to analyze and resolve patient transport problems. The members of this team included transporters, management staff members, experts in Quality Improvement (QI), a physician, and a patient care representative. This team met and developed solutions to existing problems. With the implementation of these solutions,

stakeholders became more satisfied with the PTT. This satisfaction was noted by a decrease in the number of incident reports received relating to patient transport, and a positive response regarding patient transport in patient survey data. After problem resolution, CQI teams must be reconvened at intervals in order to reassess their work, and develop solutions to new areas of concern. By continually assessing the area and dealing with new problems, satisfaction with the PTT is more likely to continue. An interesting point from Bolling and Duriex (1990) can be related here. The VAMC that these two authors studied, found that it was crucial to solicit ideas from its volunteer workers. This volunteer group (the "front-line" workers) proved to be valuable part of problem solving.

Design of a Patient Transport Team

British Porters

Roberts (1985) notes the role of a "porter" in the British hospital system. Porters have a very broad job description. Not only do these individuals transport patients and materials, they move furniture, deliver

and collect patient meal trays, and change oxygen cylinders as well as other requirements (refer to Appendix C for a figure reproduction outlining porters' duties). The porter is kept occupied with many different duties; there is little time for them to be unproductive. Schall (1988) notes that transporters in some hospitals have been integrated into Materials Management for the primary reason of keeping them productive during slow transport times. Transporters assigned to Materials Management departments were put to work distributing supplies and sorting mail; the exact type of "fetch and carry" noted in the British porter system. When hearing of the British porter system, and reading its list of duties, Colonel J. Southby, Chief, Department of Nursing, WRAMC, stated, "This reminds me of the orderlies we had when I was in nursing school, that's exactly what they did; it seems some places have come full circle (personal interview, September, 1992)." Conversely, Martin and Jevnikar (1983) note that at St. Joseph's Hospital in Ontario some portering functions had to be separated out from the list of duties noted in the Roberts' article. These separate activities were given exclusively to the

portering staff. The reason for the separation of duties was that certain portering requirements (e.g. mail service) proved to be a full-time job in themselves.

Options for the Design of an In-House Patient Transport Team

Patient Transport Teams can be centralized or decentralized. A decentralized team is one where the employees are permanently assigned to areas requiring patient transport services (e.g. nursing units, radiology, admitting). The transporters have their duties assigned by the staff in those departments. These decentralized transporters are in effect, employees of the areas in which they are assigned. Occasionally, transporters are managed by one central group, for example nursing administration or materials management, but they are permanently assigned to areas requiring transport services. In this case, employees are centrally managed but decentrally assigned. These employees may be evaluated by the department that manages them, with input from the managers of the areas in which they are permanently assigned.

A centralized PTT is one in which all employees

belong to the same department, are centrally located, and managed. The system operates as follows: when the need arises for a patient to be transported from one area of the hospital to another, the area identifying the need calls the PTT dispatcher, who assigns a transporter the task of moving the patient (Bolling and Duriex, 1990; Hare, 1988; Schall, 1988). Some areas with prescheduled patient events, such as the Operating Room, and some parts of Radiology, supply the PTT with copies of its schedules. The PTT then assigns some work to its staff in accordance with these schedules. Transportation of materials may be handled in much the same way. Some institutions opt to create a messenger service, for mail and material movement, as a subordinate part of the transport team.

Two key elements to making a centralized PTT work are logs to track work output, and efficient communication between the dispatcher and transporters. Deckshot and Feige (1987) note that, "Each escort maintains a 'daily transporter log'...which ensures an average number of trips/escort..." and "The dispatchers maintain a 'daily dispatcher log', giving a detailed accounting of each patient transferred: the manner,

time, condition of the patient, and the reason for the transfer (p. 106)." These logs are crucial to maintaining statistics regarding workload and productivity. An individual escort's productivity can be monitored from their personal log, with the dispatcher's log being used as a "control" to assure honesty in reporting. Aside from facilitating truthfulness in reporting, the dispatcher log also contains information that the transporter log does not. This dispatch information consists of the time the call requesting transport was received in the PTT office and the time the assignment was made to a staff member. The entire department's productivity can be followed via the logs. When productivity is followed closely in an area such as this, better use of personnel can be achieved. When "down time" is noted via the logs, arrangements can be made to utilize the staff appropriately. An example of suitable use of the staff during "down time" would be to have them do studies of transport equipment, assuring that the vehicles are distributed appropriately, and are in a state of good repair.

Communication between the transporter and the

dispatcher may take place via the phone, a beeper or a radio system. Hare (1988) notes a system where a phone line is dedicated exclusively for transporter to dispatcher communication. After the transporter completes an assignment, he should use the dedicated phone line to call the dispatcher to receive his next assignment. Similarly, the transporter can be paged via a beeper to call the dispatcher, or spoken to via a radio system, to be given his next assignment. Taylor (1991) states that a transporter should not return to the dispatch office after an assignment, without first communicating with the dispatcher. When the transporter talks with the dispatcher, he can receive his next assignment; in this way, the transporter has not wasted time with a trip back to the dispatch office.

Implementation of a Centralized Patient Transport Team

In order to implement a PTT, documentation must be prepared that demonstrates the need for it to exist. Schall (1988) notes that logs may be kept to document all transport assignments and pertinent influencing factors. Some of these influencing factors are: time

span from call requesting transport to transport initiation and completion; special needs of the client (e.g. portable oxygen, I.V. poles, restraints); and mode of transportation needed. In the case of material transports, special needs may include ice for certain types of specimens, or carts for equipment. The Schall article states that the logs should be kept for two weeks. Some institutions may find the need to establish different documentation guidelines. Major(P) C. Woodling contributed to a PTT establishment study in a smaller, civilian institution, she states, "We only required two weeks worth of documentation; realistically, we did not feel we would get compliance with a longer requirement (personal interview, October, 1992)."

If a decentralized PTT exists, and the decision is reached to centralize it, very careful planning must take place. Kuhn (1992) notes that "the first step is to establish a task force composed of representatives of the major departments involved (p. 36)." These key stakeholders must be involved in the development of the centralization plan, because it will necessitate their areas relinquishing FTEs to support the centralized

PTT. Additionally, the centralization plan will also be the genesis of institution-wide policies and procedures regarding the transportation function. These transportation strategies may have a profound impact on the key stakeholder's departments, and on the organization as a whole. Likewise, Deckshot and Feige (1987) state that the transporters themselves should be kept abreast of centralization plan developments. Transporters need to be kept aware of the planned centralization so that they are coopted into the change in operations early in the process.

Taylor (1991) notes that PTT standards must be developed. These standards will define how the PTT is to operate. Additionally, the standards will be used to evaluate the team. The afore mentioned task force is the group to develop these criteria. The department that will be responsible for the PTT must then be given the responsibility and authority to assure that the team executes the developed standards. Deckshot and Feige (1987) state, "A prerequisite for the success of a department such as patient transfer is that the intent of the hospital's executive staff is clearly understood by the employees involved (p. 105)." The

hospital executive staff must support the PTT concept and the standards developed by the task force. This support is necessary so that organizational reluctance to adopt the new centralized PTT can be avoided.

The standards developed for the PTT need to be comprehensive in order to effect its smooth operation. Schall (1988) notes that the personnel selection process is very important. First, the appropriate number of staff must be determined in order to provide sufficient coverage of the institution's needs. The correct number of individuals needed for the PTT may be assessed by determining the estimated number of transports required in a given period of time, and the approximate amount of time to be spent on each assignment. After implementation of the PTT, actual patterns of transport calls should be monitored and staffing plans altered as needed. It should be remembered that part-time staff offer a malleable alternative to traditional, rigid staffing methods (Taylor, 1991). Suitable employees must be found to man the PTT. It must be remembered that the PTT staff may be the first and last people with whom the patient and his significant others interact (Deckshot & Feige,

1987; Hare, 1988; Schall, 1988; Taylor, 1991). These transporters must be pleasant individuals, who are committed to their tasks. This commitment should be evidenced by expressing a caring attitude toward the patient and his significant others. Finally, attention should be paid to the transport staff's appearance. Because of the PTT's public presence, the organization should give thought to the attire of the team members. Recommendations exist for the transporter's dress to be uniform and professional in nature (Deckshot & Feige, 1987; Hare, 1988; Taylor, 1991).

Standards regarding the training of the members of the PTT must be established. The employee must be properly taught what is expected of him and how to do his job. Proper ways of dealing with the public in general, and with the patient and his significant others in particular must be stressed. Patient movement (i.e. lifting) techniques, and proper equipment operation need to be taught as well (Schall, 1988). Employees must also be oriented to the functional aspects of the department. These functional aspects include: how transport assignments are made; expected length of time per transport; and how work

logs are to be maintained by each transporter and the dispatcher, as well as the importance of the logs. Other items the transporters should be taught about include Cardiopulmonary Resuscitation, initial management of an obstructed airway, and hospital fire and safety protocols.

The staff mix (ratio of dispatchers and supervisors to transporters) of the PTT must be determined by the task force as well. The team staffing must be determined based upon the department that oversees the PTT (e.g. Nursing, Materials Management, or whatever area is a feasible alternative). Additionally, the first line supervisor, and the number of transporters and dispatchers needed for each shift must be decided. The suitable mix of transporters and dispatchers, and the times of day that are most heavily staffed should be determined based on data. This data must express the number of transports needed over a period of time, the amount of time to be spent on a transport, and when the peaks in demand for transports occur (Kuhn, 1992).

The task force must also determine the types of patients and materials the team will transport.

Certain types of patients are at imminent risk of fatal events due to their injury or disease process (e.g. Intensive Care (ICU) and Emergency Room (ER) patients). These critically ill clients would certainly not be transported by the PTT, however the task force must determine whether or not they will staff the team with enough assets to assist with the transport of these patients. Certain materials, such as infectious body fluids, may be determined inappropriate for transporters to handle.

Taylor (1991) notes that standards regarding transportation equipment must be established. Questions must be answered in reference to what department will be responsible for the equipment. Several alternatives exist for equipment management. The PTT, or its parent department could be required to purchase, store, and maintain its own equipment. Another option is to require each of the departments needing transportation services to purchase, store, and maintain its own equipment.

Once standards are developed, and staff is selected and oriented, the PTT will become operational. After activation, the group must be evaluated for

utility. Work logs must be assessed by the appropriate supervisory personnel. These assessments should produce modifications to all afore mentioned standards as needed. Periodic examination of the team's effectiveness should be programmed into the implementation plan so that it offers optimum support to the client.

Cost Savings

A challenge for healthcare organizations today is to provide service that is cost-effective. Dawkins (1983) discusses the mandate that many hospitals are given which is to increase productivity, without allowing costs to increase. By defining productivity levels, a hospital can increase its work output. Productivity for a PTT may be defined as: length of time required to transport the average client; number of transports to be done per worker per day; and, what are the functions transporters should perform during periods of reduced workload. Money is, also, saved when task efficiency is increased.

Under a noncentralized transport system, the organization loses money. Noncentralized PTTs are

inefficient, often relying on professional (both clinical and managerial) staff for patient transport. These professionals are well-paid for doing jobs that require great skill and education. When highly skilled, well-paid professionals are used to perform unskilled labor, the hospital loses money. Kuhn (1992) notes the savings that a centralized PTT can create for an organization. By multiplying the approximate amount of transport hours per year by the average salary (including benefits) of the professional group (a composite of many different types of professionals who transport patients when there is no one else to do it) a dollar figure is reached. By multiplying this same hour figure by the average salary (including benefits) of a transporter, another dollar figure is developed. When these two dollar figures are compared, the savings factor is estimated (see Appendix D).

Further savings for a hospital can be realized when the transport staff is composed partially or primarily of part-time workers who receive fewer benefits than full-time workers. Additionally, volunteer staff can augment the transport team. If volunteers are reliable, the hospital can realize a

cost savings while increasing productivity. With the exception of a paid dispatcher, the VAMC in Huntington, West Virginia operates its PTT with an entirely volunteer staff (Bolling & Duriex, 1990).

Conclusion

Patients come to the hospital to have illnesses diagnosed, and injuries and diseases treated. Third party insurers are reluctant to pay for increased hospital stays. Increased lengths of stay due to inefficiency are not reimbursable. Inefficiency causes disgruntlement for a healthcare organization's key stakeholders, resulting in a poor image for the institution. Inefficiency may cause the patient to perceive that he is not being treated well. The hospital staff may view inefficiency as something that forces patients to go without proper treatment. A hospital staff member may see himself as being used to do jobs he was neither educated nor hired to do. Effective patient transport (i.e. by the right people, at the right time, at the right place) is a way to assure an increase in satisfaction of the hospital's key stakeholders. Patient Transport Team effectiveness

can be assured by proper standard development and periodic review.

A well run PTT is a way for a proactive healthcare organization to provide efficient, cost effective care to its clients. When a patient's hospital stay is not beleaguered by delays, foul-ups, and a disgruntled staff, he will leave the hospital confident that the organization provided good service. Similarly, when a hospital staff member is doing the job he was educated and hired to do, he will see the institution as a place that wants to provide quality care to its clients. When these two groups of key stakeholders view the organization as trying to provide a high standard of service, the institution will see its image become brighter and its stature in the community rise.

Purpose

The purpose of this Graduate Management Project (GMP) was to design a PTT that was amenable to WRAMC's needs. The many factors that impact on the patient transport function were considered. These factors were: the needs of key organizational stakeholders; budgetary constraints; different types of PTTs that can

be put into place; and the scope of service that was required of a PTT in a hospital as large as WRAMC.

Key organizational stakeholders are individuals or groups that can have a significant influence on the way an institution operates. Examples of key stakeholders that can influence patient transport at WRAMC are: the organization's executive leadership, Department of Nursing, Department of Radiology, Occupational Therapy, Physical Therapy, and select outpatient clinics. All of these groups have an interest in patient transport, and can influence its success or failure.

Budgetary constraints at WRAMC are a result of Department of Defense spending restrictions. As a result of these constraints, WRAMC may not entertain the idea of funding new FTEs without eliminating other positions in the organization. Therefore, the challenge of how to staff the team is presented.

Patient Transport Teams may be of the centralized or decentralized version. The centralized type generally maintains employees in a central location, managed by one identifiable person from one department. Conversely, the decentralized variety generally has employees assigned to specific departments throughout

the hospital with nebulous lines of authority. An entirely decentralized PTT, is generally thought not to work. Some components of a decentralized team may be useful.

Walter Reed Army Medical Center is a large, organizationally complex, and clinically diverse medical treatment facility. This will require the PTT to meet the organization's special needs. These special needs were gleaned from careful evaluation of the institution's key stakeholders.

METHODS AND PROCEDURES

The three methods and procedures used in this project are: review of existing Patient Transport Teams (PTTs) in hospitals in and around the National Capital Region, interview, and literature review. The rationale for these three methods is covered in this area of the Graduate Management Project (GMP).

Various hospitals, of a size and scope of service similar to Walter Reed Army Medical Center's (WRAMC's), were reviewed to determine the current patient transport practice in the community. Initially, the review of these institutions was conducted

telephonically. The type of PTT that a given organization had, and how well it operated, determined whether or not an on-site review was executed. The organizations considered for on-site review were: National Naval Medical Center, National Institutes of Health, Holy Cross Hospital, Washington Adventist Hospital, University of Maryland Medical System, George Washington University Hospital, Montgomery General Hospital, Prince George's Hospital Center, The Washington Hospital Center, Johns Hopkins Hospital, Anne Arundel Medical Center, and Georgetown University Hospital. Representatives of six Army medical centers were interviewed telephonically to determine how the challenge of patient transport was met.

Interviews were conducted with key departments in the organization (key stakeholders) having an interest in patient transport. These interviews were held in an effort to understand what departments requiring patient movement needed in a transport team, both, on practical and ideal levels. Employees in these areas were questioned either alone or in pairs. The anonymity of those being interviewed was maintained, unless they replied negatively to the question, "Do you object to

being cited by name and/or position?" The questions posed were open-ended. Yin (1989) notes that these type of queries deal with facts about a situation while at the same time allowing the researcher to elicit opinions from the staff member being interviewed. These questions were asked of the people that were interviewed:

- o "How do you view the patient transport function at WRAMC now?";
- o "How does your department deal with its needs for patient transport?";
- o "What are your department's needs for patient transport?";
- o "How do you see your area's patient transport needs being best filled?";
- o "What would you be willing to do to help achieve your area's transport requirements?"

Other questions were raised with individuals as the need was noted (i.e. during the course of an interview, as a particular problem, concern, or interest was discovered, these areas were pursued if it seemed they would be relevant).

The preceding questions were designed

specifically to obtain the insights of the interviewee. According to Patton (1990), this type of questioning is combines "Interview Guide Approach" (p. 288), (where questions are predetermined regarding sequence and wording), and "Informal Conversational Interview" (p. 288) (which is designed so that the questions are asked in the natural flow of dialogue). Initially, a predetermined list of questions was asked in the interviews. The responses and insights of the interviewee determined how closely this list of questions was followed. Yin (1989) states that when the insights of the interviewee are obtained, he becomes more of an informant. These informants may be critical to the success of a project because they provide "corroborating evidence" (p. 89), or suggest the sources of such material. The combination of interview techniques provided freedom to deviate from the predetermined list of questions. The ability to deviate was necessary because opportunities to gain additional or different information (and, therefore, insight into the problem) arose.

Representatives from the following areas were interviewed: Nursing, Radiology, Occupational Therapy,

Physical Therapy, Pharmacy, Directorate of Pathology and Anatomic Laboratory Services (DPALS), and Directorate of Medical Administration Activities (DMAA). The Department of Nursing is responsible for ensuring patients and materials are transported throughout the organization. Radiology, Physical Therapy, and Occupational Therapy also require patient transport. The Pharmacy and Laboratory may require the "fetch and carry" component of a centralized PTT. The Directorate of Medical Administration Activities, had previously been responsible for the PTT function at WRAMC. This offered a historical perspective of the requirements for a PTT. Clinic transport needs were identified by the key stakeholders interviewed. These individuals offered a current, comprehensive view of the organization's transport needs.

The literature was reviewed to identify alternate approaches to the patient transport function. Patton (1989) notes that this is a reasonable use of the literature. The author of this GMP was cognizant of the possibility of bias presented in the literature.

DISCUSSION

Army Medical Centers

Representatives of six Army medical centers were telephonically interviewed to determine how the transport function is handled in military facilities similar to Walter Reed Army Medical Center (WRAMC). Four hospitals, Brooke Army Medical Center (BAMC), William Beaumont Army Medical Center (WBAMC), Fitzsimons Army Medical Center (FAMC), and Dwight David Eisenhower Army Medical Center (DDEAMC) have either loosely developed transport systems or no system at all. The transport needs of those organizations are not being met. Tripler Army Medical Center's (TAMC) and Madigan Army Medical Center's (MAMC) transport teams serve the hospitals relatively well. This information regarding transport adequacy was gleaned from representatives of these institutions. These individuals were interviewed regarding the transportation practices at these hospitals.

Fitzsimons Army Medical Center currently utilizes approximately six soldiers from its Medical Holding Company, as well as, sporadically available, American

Red Cross (ARC) volunteers. One Noncommissioned Officer (NCO) from the Department of Nursing is permanently assigned as the supervisor of the team. Occasionally, FAMC uses "summer hires" to assist with the patient transport function. This transport program has never been formalized. Because the transport program is informal, and because of the instability of its pool of workers, the organization's patient transport needs are not being met (telephonic interview, Colonel W. Wimett, Chief, Department of Nursing, FAMC, September, 1992).

William Beaumont Army Medical Center's Patient Transport Team (PTT) is staffed entirely by volunteers. It was described as a "helpful" system, but not one that is able to meet all the needs of the organization. Some patients are too ill to be transported by the volunteer workers. The issue of misusing volunteers was also raised during the interview. It seems, the staff asks the transporters to move patients who are very ill. The transporters' scope of practice does not allow them to move those types of patients. Because the team of volunteers is not a permanent group of people, and there are a number of patients it cannot

handle, the needs of the organization are not being met (telephonic interview, Colonel M. Kohl, Chief, Department of Nursing, WBAMC, October, 1992). Both WBAMC and FAMC's transporters work during the day shift only.

Colonel N. Nooney, Chief, Department of Nursing at DDEAMC stated that patient transport in her institution is "...a free-for-all; there is no service [sic]. The OR and PACU do their own thing (telephonic interview, November, 1992)."

Brooke Army Medical Center currently uses "a few 91Bs, taken out of hide" (telephonic interview, Colonel J. Graham, Chief, Nursing Administration, November, 1992) to staff the transport system in Beach Pavilion where the bulk of its inpatient work is done. These soldiers are assigned to the transport office full-time. The transporters are managed in a central location by the Department of Nursing. An ARC volunteer is the dispatcher for the team, and communicates with the transporters via pager. Because BAMC is a large, geographically disseminated organization, it has unique transport needs. Despite extra support from a casual company, this transport

team does not meet BAMC's needs.

Tripler Army Medical Center, as part of a Congressionally funded Nursing Demonstration Project, has had a decentralized PTT with a paid staff in place for approximately three years. The transport staff members are assigned to the Department of Nursing, and are permanently employed in an individual nursing unit. These individuals are directly supervised by the wardmaster when they work the day shift. Fewer transporters are assigned on the evening and night shifts because there is less transportation work during these hours. Each team member is responsible for the transportation needs of several nursing units. These employees are overseen by the nursing supervisor. During the day, when supervision is stricter the system works well. On the evening and night shifts when supervision is lacking, the decentralized system does not meet the needs of the organization.

When a decentralized transport pool is employed by a large, encompassing department such as the Department of Nursing, transporters can be diverted to areas of high workload from areas of low workload. Because of its ability to distribute staff according to workload,

and to closely supervise the team, the PTT at TAMC has received favorable comments. Problems with the transport service occur only on the evening and night shifts, when there are fewer transporters and the supervision is not as strict as the day shift (telephonic interviews CPT Chinn, Project Officer, and LTC Kirk, Chief, Medical/Psychiatric Nursing Section, TAMC, September, 1992). Tripler Army Medical Center is the only hospital contacted, military or civilian, with a decentralized PTT that apparently provides quality service to the consumer.

Twenty regularly scheduled ARC volunteers, supervised by an enlisted soldier (E-4) with the Military Occupational Specialty (MOS) of 91B, compose the PTT at Madigan Army Medical Center (MAMC). This team operates five days per week, for approximately seven hours per day. The volunteers perform their own dispatching and time scheduling. The team is centrally located in the hospital. Assignments are made by the dispatcher. A few pagers are used to communicate with select team members when they are away from the base station. The volunteers who staff the team have been primarily recruited by word-of-mouth from other

transporters. The ARC hierarchy was unresponsive regarding the need to recruit volunteer transporters. The PTT has been successful in its mission of transporting patients and paperwork during its limited hours (telephonic interview, MSG Brasnett, December, 1992). This system has been in existence since March of 1992.

**Civilian Patient Transport Teams Which Do Not
Meet Organizational Needs**

Representatives of The Washington Hospital Center, Fairfax Hospital, George Washington University Hospital, Georgetown University Hospital, Holycross Hospital, and Montgomery General Hospital were telephonically interviewed regarding the patient transport function in their facilities. The transport function in all of these organizations is accomplished via a decentralized mechanism. None of the people interviewed felt that their hospital's transporters were organized in an actual team. Transporters are allocated to individual areas with first line supervision by the staff of those areas.

The primary problem that arises in a decentralized system is the inefficient use of manpower. This poor

use of staff manifests itself in workers not being diverted from areas with a light workload to areas with a heavy workload. Additionally, a lack of uniformity to the transport function exists. Variability regarding transport is perceived as a problem because so many areas require patients and materials to be transported. Each area carries out the transport function in its own way, without sufficient justification. The process becomes very chaotic for both patients and staff. The patient transport function in these hospitals does not work well and is in need of change; for this reason these organizations were not visited.

**Transport Teams Which are Organized to Meet the
Organization's Needs**

Site visits were made to the following organizations: National Naval Medical Center, Bethesda; Washington Adventist Hospital; University of Maryland Medical System, Baltimore; Prince George's Hospital Center; Anne Arundel Medical Center, Annapolis; and Johns Hopkins Hospital, Baltimore. These visits took place from September through December of 1992.

Scope of Responsibility for Transporters
In the Hospitals Visited

In the hospitals visited, transporters are primarily responsible for moving patients and material (including interoffice and U.S. mail in some organizations). Routine movement of patients is handled in three ways. First, some departments may operate on predetermined schedules. These schedules are communicated to both the PTT and the effected patient care areas 24 hours in advance. The PTT assigns a transporter(s) to the given schedule with the understanding that it is his responsibility to deliver each patient to his appointment approximately 10-15 minutes before the scheduled time.

Another way in which patient movement is handled, is by an area requiring transport services calling the PTT dispatcher and asking him to send a transporter to move the patient. The dispatcher then sends a transporter to execute this task.

The final way patient movement is handled is the "stat" call. When a patient must be moved quickly, the PTT dispatcher is notified. The dispatcher in turn has an individual designated for urgent patient movement

and has a method for reaching him quickly (e.g. by radio or pager). The dispatcher pages or radios the designated transporter who appears in the patient care area to transport the patient.

Special considerations in patient movement include patients with special needs, such as oxygen, I.V. poles, and restraints. An additional special consideration is who *transfers* the patient to the wheelchair or litter for transport. The PTT staff must be taught the reason for oxygen, intravenous infusions, and restraints. In addition to the purpose for these devices, the PTT staff must be taught about the proper functioning of this equipment, and basic problem solving should some untoward incident occur during a transport. Whose responsibility it is to move the patient onto the litter or wheelchair on which he will be transported is a question that is left open to interpretation in the organizations visited. For the most part, officially it is the responsibility of the patient care area staff in whole or part. Realistically, the transporter deals with the responsibility much of the time; especially when the patient care area is understaffed or busy.

Material movement (also called "Messenger Service") is handled by a designated transporter who makes rounds every one to two hours to all areas. This individual generally moves lab specimens, documents, small amounts of bulky materials such as X-ray jackets and pharmaceuticals (e.g. I.V.s and drugs). Some transport teams may move blood products, as well. Emergency lab work is handled by paging the stat messenger via beeper or radio. Additionally, at Anne Arundel Medical Center, the messenger carries a cardiac arrest beeper and responds to all resuscitation calls to act as a "runner". This "runner" obtains equipment that might be needed for a resuscitation effort. Anne Arundel Medical Center is the only organization to formally define this responsibility for the transporters. The thought at Anne Arundel is the transport staff members' self-esteem is increased when they are given the responsibility of helping with resuscitations. The transporters' self-esteem needs to be elevated because much of their job is considered routine by other hospital staff members, and they are readily blamed for untoward occurrences over which they often have no control. In all of the other hospitals

visited (except for the NNMC, which does not utilize its PTT to move material), the messengers do respond to stat requests for lab specimen movement. Because they are responsible for stat lab specimen movement, these messengers may, also, unofficially help as a "runner" during patient emergencies.

During slow patient movement periods ("down time"), the transporters are responsible for locating conveyance equipment. This is necessary because these patient transport articles are left throughout the hospital and must be returned to either a central location, or specific departments. Additionally, transporters in some organizations are responsible for preventive maintenance and minor repairs on the conveyance equipment.

The hours of PTT operation for the civilian organizations reviewed ranged from 13-24 hours per day, seven days per week. The PTT at the NNMC operates for nine and one-half hours per day, Monday through Friday. Staffing levels and scope of responsibility fluctuate depending on the time of day. For example, evenings and nights are typically staffed with fewer people and the responsibilities of the PTT are frequently limited

to responding to specific requests and stat calls. Because evenings and nights *may* be slower in terms of transport requests, more preventive maintenance and minor repairs may be done on equipment on these shifts. It should be noted, however, that because of decreased staffing on these tours of duty, the transporters may be as busy as their daytime counterparts.

Communication

The three most common forms of communication used by the PTTs in all of the hospitals visited are the telephone, pagers, and/or radios. Washington Adventist Hospital and Prince George's Hospital Center utilize radios on a limited basis. All hospital representatives interviewed felt radio use to be the most efficient form of communication available. The organizations that do not utilize radios are eager to implement this mode of communication. The primary positive aspect of radio communication is that it allows for a two-way exchange of information. The PTT dispatcher, using the radio system, can get immediate feedback from transporters.

The pager system is an acceptable way to

communicate in that the individual being paged may be given a one-way message either by voice or digits. In the case of a digital pager the dispatcher is limited to sending an alpha-numeric message only. The disadvantage of the pager system is that only one-way communication is possible. Thus, unless the transporter acknowledges the page, the dispatcher has no way of knowing if the message was received.

The phone is the least effective method of communication. One must realize that there are a limited number of phone lines into the dispatch office, and only one dispatcher available to answer the phones. Due to these limitations, the phone is the least efficient way to communicate. Additionally, if the dispatcher must locate a transporter who is away from the office it would be almost impossible to locate him via phone unless the dispatcher knew exactly where he was. The number of manhours lost in trying to locate people via phone, on a continual basis would be phenomenal.

Equipment

The location and maintenance of patient conveyance equipment (wheelchairs and litters) is an aspect that has not been satisfactorily resolved in any of the hospitals visited. The National Naval Medical Center's (NNMC) PTT is a contracted service. This contractor must provide a certain amount of its own equipment. However, the hospital's Medical Repair Department services the equipment. In the other organizations, there was a combination of responsibility and authority regarding transportation equipment. In some organizations, transportation equipment is a distinct part of the PTT; it is centrally located and the PTT is responsible for minor maintenance. When transportation equipment is needed in the organization, it is retrieved by transporters from the central location (usually a room adjacent to the transport office).

Equipment is decentrally located in other organizations. Decentralized, in this instance, means a few wheelchairs and litters are distributed to each area requiring patient transport services. When the equipment requires repair in most organizations, it is usually sent to the maintenance department of the

hospital. In other organizations, despite the fact that the equipment is decentralized, the PTT must still assume responsibility for its availability and minor repairs.

Currently, the University of Maryland Medical System (UMMS) has its equipment decentralized to nursing units. The nursing units assume total responsibility for the equipment. However, in the future, each nursing unit will maintain some equipment for its *intraunit* transport, while equipment for *interunit* transport will be stored by the PTT.

Each organization must plan on how best to deal with patient transport equipment. Because every hospital is unique, one plan for equipment management cannot be applied to all institutions.

Education and Training

In the hospitals visited, new transporters attend general hospital orientation which encompasses fire safety, general safety tenets, infection control, and tours of the organization. A preceptorship-style orientation is utilized at the departmental level. During the preceptorship, an experienced transporter

teaches the new employee how the transport team operates and defines the staff members' responsibilities. Some formal training unique to the transport team occurs in some organizations. Some examples are body mechanics and the operation of patient transport vehicles. Training in body mechanics teaches the proper way to lift and move patients. Some organizations require employees to be certified in Basic Cardiac Life Support (BCLS), as well.

Standard governing the education and training of new transporters must be developed. The functions executed by the PTT, and the written institutional policies and procedures governing these functions must drive education and training. When standards are used in this manner, the organization may be assured of adequately trained transporters. Training to standard helps new staff members know exactly what their responsibilities are and how these tasks should be discharged.

Staff Mix

Three types of staff members work in PTTs; transporters, supervisors and dispatchers. The number

of staff members from these three categories who work at any given time is determined by the needs of the individual organization. Some aspects of the hospital that must be taken into account when establishing staff mix are peak work hours, staff capabilities, and the availability of supervision from other departments. Regarding staff capabilities, some organizations, also, utilize transporters as dispatchers during slower periods. If the dispatcher/transporter is transporting a patient, the phone in the PTT office is answered by a recorder. During off-tours, supervision of transport personnel sometimes falls to the nursing supervisor or the dispatcher (if there is one present). Off-tour supervision for the PTT is an issue that must be resolved, when initial standards for the group are developed. All of the interviewed representatives from outside organizations stated that the off-tour transporters should not be permitted to have too much autonomy.

Ownership of the Patient Transport Team

Patient Transport Teams were assigned to a variety of departments at the institutions visited. Because

the NNMC's PTT is a contracted service, it is assigned to the Directorate of Contracting. At the University of Maryland Medical System, Washington Adventist Hospital, and the Johns Hopkins Hospital, the PTT is assigned to the Materials Management Division. None of the representatives of these organizations were able to explain the reason the PTT was part of Material Management other than that it had always been that way, and that, perhaps, it was because the PTT moved materials as well as patients. At Prince George's Hospital Center and Anne Arundel Medical Center the PTT is a part of the Department of Nursing.

Needs of Walter Reed Army Medical Center's Stakeholders

Representatives of the Department of Nursing, the Directorate of Medical Administration Activities, the Directorate of Pathology and Anatomic Laboratory Service, Radiology, Physical Therapy, Occupational Therapy, and Pharmacy were interviewed. The priority for the PTT at WRAMC, as stated by these individuals, is to transport patients to their appointments in a timely manner. The second priority for the PTT is to return patients to the wards, or move them on to other

appointments as quickly as possible. Any other function for the PTT is secondary to moving patients to and from appointments. Currently, getting patients to appointments on time is seen as a major problem.

After meeting the need for patient transport to and from appointments, other areas may be addressed. The stakeholders interviewed stated that many patients arrive at WRAMC with an immediate need to be transported to appointments or a need to have transport equipment available. Currently, the first and second floor lobbies at the main entrance to WRAMC do not have any place to store transport equipment. The PTT's office is being moved to WRAMC's ground floor. Its proximity to the lobby will help to decrease this problem. However, the PTT staff must remain cognizant of the need to have transport equipment available for patients entering WRAMC through the first and second floor lobbies.

The stakeholders interviewed expressed a need for a "fetch and carry" or messenger service, specifically for the Lab and Pharmacy. The Pharmacy's primary need is to have the carbon copies of physician order sheets ("pink slips") picked up on the wards and transported

to the appropriate area in the hospital. Occasionally, the Pharmacy would need to utilize the messenger aspect of the PTT to move small, lightweight pieces of equipment when the dumbwaiters are not operational. Lieutenant Colonel Edwards, Chief of the Inpatient Pharmacy, stated that a messenger service could significantly decrease his department's personnel costs (personal interview, 9 November 1992). The Directorate of Pathology and Anatomic Laboratory Service (DPALS) also needs the same type of messenger service to transport lab specimens from the wards and clinics to the appropriate testing sites. A key problem with lab specimens is if delivery is inordinately delayed, the results may be incorrect. Walter Reed Army Medical Center would realize a cost savings from tests not having to be repeated because of inaccuracies due to late specimen arrival at the test site.

The fourth and final need expressed by WRAMC stakeholders is to have transport equipment available. Frustration was expressed by the individuals interviewed at not being able to secure equipment such as wheelchairs and litters when needed. A securable pool of transport equipment is what many people feel is

the answer.

CONCLUSIONS

A conclusion gleaned from interviews with Walter Reed Army Medical Center (WRAMC) stakeholders is that there continues to be a perceived need for a Patient Transport Team (PTT) at WRAMC. The stakeholders also feel that the number of personnel currently employed inadequately meets patient movement needs. Additionally, all interviewed stakeholders expressed willingness to participate in a Process Action Team to help find solutions to transport problems. It can be deduced that the need for a PTT continues, and that the individuals most interested in its existence are willing to work toward the goal of a permanent, well functioning PTT at WRAMC.

The civilian hospital site visits demonstrated that efficiently functioning PTTs exist. However, organizations are unique and what works for one hospital may not work for another. A given institution must be willing to try new ways of functioning and, later, modify or eliminate them as necessary. Flexibility and a true interest in having a productive

service are key to having a PTT that works well.

RECOMMENDATIONS

Design

Due to Walter Reed Army Medical Center's (WRAMC) size and diversity of service, a Patient Transport Team (PTT) that has components of centralization and decentralization would best meet the organization's needs. Regarding centralization, most of the assigned transporters during the day shift will be located in the PTT office with a dispatcher. Work will be assigned to the transporters by the dispatcher, as requests are received. Ideally, all transporters will carry hand-held radios so that immediate two-way communication can occur between them and the dispatcher. Two-way communication is optimal so the transporter can notify the dispatcher about problems encountered while on an assignment, and so the dispatcher can notify the transporter about future assignments. Assignment logs will be maintained by the dispatcher so tasks may be tracked and distributed equitably. All transporters will log the time an assignment began and ended, the type of assignment, and

any problems encountered.

Regarding decentralization, designated transporters will be assigned to high volume, transport intensive areas. These areas are Radiology, Physical Therapy (P.T.), and Occupational Therapy (O.T.). These decentralized assignments will be rotated among the PTT staff at regular intervals. These terms will be decided by the PTT supervisor. The reasons for this rotation are three-fold. First, all members of the PTT must be familiar with all areas in which they may be required to work. Second, the supervisor must have contact with the transporters in order to fairly and adequately evaluate them. Regular rotation of the decentralized staff, will allow the supervisor to more frequently interact with them. Third, the staffs of the PTT, Radiology, O.T., and P.T. will never adapt to select individuals' idiosyncracies to the point that they are not flexible enough to work with others.

Because areas such as Radiology, O.T., and P.T. schedule patient appointments, assignment logs may not be needed. The appointment schedule should be divided between each transporter assigned to the area so that the work is equitably distributed. Copies of the

divided patient schedules should be posted in Radiology, P.T., and O.T. These schedules must be available so that the staffs of these areas know which transporter will move which patient.

Two messengers should be designated from the pool of centralized transporters to make hourly rounds on each ward, clinic, all satellite pharmacies, and the lab. The purpose of these rounds is for specimen and material collection and distribution. The messengers will maintain a log as well to document the materials they have transported. The messenger positions will be regularly rotated among all the transporters so that all staff members will be able to function in all roles.

As the services provided by the PTT grow, staffing should be increased in accordance with the recommendations of Colonel Bystran, USA (Ret), and Lieutenant Colonel Smith (reference Appendices A and B). Furthermore, in a large, complex organization, such as WRAMC, the supervisor's position should be separate and distinct from the dispatchers and transporters. The supervisor who does not have to dispatch, will be free to travel throughout the

institution to observe and interact with the transporters and other hospital staff. A suggestion was made that the dispatcher position should be used as a promotion from transporter. Dispatchers may substitute for the supervisor when he is on leave. Transporters, in turn, may be crosstrained to perform dispatcher duties, as needed.

The bulk of transport equipment should be stored by the PTT staff in a room adjacent to their office. Each patient care area, however, should maintain a few wheelchairs and litters for intraunit transports. Medical maintenance should be responsible for any repair work required on transport equipment.

Communication

Because the productivity of the PTT is a direct result of how many patients and how much material the transporters move, optimal communication methods are vital to its success. Two-way communication between the dispatcher and transporter is critical. When the dispatcher and transporter can talk with each other, optimal communication and increased efficiency are achievable.

One way to achieve two-way communication is through the use of a hand-held radio system. By using these radios, the dispatcher can talk with the transporters while they are completing assignments. The dispatcher can tell the transporters what their next duties will be and the transporters will never have to interrupt their work to answer a page or make a phone call. Conversely, the transporters can tell the dispatcher about difficulties, as they are encountered. The end result is that both parties can talk with one another so that they are keeping current with information that impacts on the department, its efficiency, and the patients it is serving.

In the event that radios cannot be used, one way communication devices will need to be employed. A combination system consisting of a voice pager and a dedicated phone line is optimal. The voice pager will afford the dispatcher the opportunity to talk to the transporter. The obvious disadvantage to the voice pager is that the dispatcher will have no immediate confirmation that his message has been received. In order for the dispatcher to receive message confirmation from the transporter, a phone line in the

PTT office should be dedicated solely for the purpose of transporters calling the dispatcher. This dedicated line should also be used by the transporters to call for their next assignment after completing a task.

Milestones

The PTT should expand its services to meet the needs of WRAMC's patients as soon as it is possible to do so (i.e. staffed appropriately and having written standards). An expansion plan, comprised of milestones, has been developed. These milestones should be goals for the PTT.

Currently, the PTT operates from 0730 to 1615 hours, Monday through Friday. The transporters move patients from the place of testing or treatment back to the wards; they are not responsible for transferring patients from the wheelchair or litter back into bed. Primarily, the PTT moves patients from Radiology, P.T., O.T., Cardiology Clinic, the Echocardiography Lab, and Renal Dialysis. Additionally, the transporters supply the staff at the information desk on the second floor with wheelchairs, as needed (personal interview, C. Engle, PTT supervisor, December, 1992).

The first milestone should be to expand the services provided during its current hours of operation. Patients should be transported to their appointments.

The second milestone should be to extend the hours of operation. The information paper written by Colonel Bystran, USA (Ret) recommends the PTT operate 16 hours per day, five days per week. Initially, the operating hour should be until approximately 2000-2100 hours. This would allow the on-duty staff the time to adjust to new work hours and the evening transport requirements. After four to six weeks of partial expansion in the evening time period, the final time expansion should occur with the PTT offering its services until 2330 hours.

The third, and final, milestone should be the addition of the messenger service. Initially, this service should handle only routine specimen and material collection in order to solve problems associated with this new service. Then, the messenger service may also respond to stat calls.

It must be stressed that these milestones are guidelines. Flexibility is key to making the PTT work.

As the transport staff and their supervisors begin to implement the expansion process, the milestones should be altered as needed in order to meet the patient's needs.

Staffing Issues

In order for the PTT to be efficient and effective as outlined in this project, it must have a sufficient number of staff members. The question of how to adequately staff the PTT has been raised at WRAMC in the past. Because of WRAMC's severe financial constraints, it is difficult to allocate funds to hire new employees. Because of the hiring constraints, creative ways to staff the PTT must be sought.

A well run volunteer program can support a PTT. Madigan Army Medical Center (MAMC), as noted in the discussion, has sustained a PTT (albeit, a limited one) staffed with volunteer workers. The Veterans' Administration Medical Center (VAMC) in Huntington, West Virginia also adequately operates an PTT with a volunteer force. The only paid member of the PTT at the Huntington VAMC is the dispatcher.

Jenny Tankersky is the coordinator of the

volunteer program at the Huntington VAMC. Ms. Tankersky notes that the success of a volunteer oriented PTT is contingent upon an active recruitment program. Transporters are usually recruited from the local pool of veterans. These individuals frequent the hospital for medical care and are eager to help the organization. In addition to recruitment, retention must be addressed as well. At the Huntington VAMC, special recognition lunches are held for the volunteer staff (personal interview, November, 1992).

At Madigan Army Medical Center, recruiting for the PTT is usually done by "word of mouth." Current volunteer transporters recruit from their pool of friends and acquaintances by expounding on the positive aspects of volunteer work at MAMC. The key to the success of MAMC's volunteer program is the camaraderie the volunteers develop among themselves. Retention of the volunteer transporters at MAMC is assisted by certain perquisites. These extra benefits for the volunteers include parking in the staff parking lot, and having a transport area with a separate locker room and bathroom. Additionally, the Commanding General at MAMC eagerly and regularly recognizes the volunteers

(personal interview, MSG Brasnett, December, 1992).

The average age of the volunteers at MAMC and the Huntington VAMC is approximately 65 years. Age has not presented any problems, thus far. This group of volunteers is generally able to handle transport duties without difficulty. However, any physical limitations stated by the volunteers must be taken into account when making assignments.

Occasional difficulties were noted by the staff of both the Huntington VAMC and MAMC. Problems arise when volunteers are ill; replacement transporters are very difficult to find on short notice. Because there are no paid transporters in either of these institutions, finding staff on short notice can be a hardship.

Walter Reed Army Medical Center could attempt to emulate the volunteer experiences of MAMC and the Huntington VAMC. The individual in charge of Army Community Service (ACS) volunteers is interested in recruiting members for the PTT. Once volunteer candidates, with an interest in patient transport, are recruited through ACS, they can be linked up with the American Red Cross (ARC) volunteer coordinator. The ARC volunteer coordinator could then work with the PTT

supervisor to assure that the volunteers are used appropriately. According to both the ARC and ACS volunteer coordinators, the key to a volunteer being happy is recognition. The ACS volunteer coordinator states that incentives such as flexible scheduling, awards, preferential parking, and letters of appreciation are all meaningful to volunteers. Additionally, the immediate supervisor of the area must also develop recognition programs.

There is another option for obtaining PTT staff. Walter Reed Army Medical Center could use the Continuous Quality Improvement process (CQI) by creating a Process Action Team (PAT) composed of representatives from departments that perform or require patient transport. These representatives would determine the amount of time their areas currently perform or require patient transport. The area's manhour requirement would be converted to a percent of a full-time equivalent (FTE) employee. Each area would relinquish that percentage of FTE(s) to the PTT. If this CQI method is utilized, the PTT will be able to acquire staff, without having to requisition any money from the budget (Kuhn, 1992). All of the interviewed

WRAMC stakeholders stated that they would be willing to sit on a PAT, or have a member of their department do so, in order to arrive at solutions to patient transport challenges.

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HSHL-RMN

14 May 1990

MEMORANDUM FOR: Chief, Department of Nursing

SUBJECT: PATIENT TRANSPORTATION SYSTEM

PURPOSE: To determine the extent of the need for a patient transport system at Walter Reed Army Medical Center.

METHODOLOGY: Data collection was conducted on certain inpatient wards and certain outpatient clinics for a full seven day period. Inpatient collection was done for twenty-four hours and included the Emergency Room. Data reflected only the number of requests for transport of a patient and the location to which the patient was to be transported.

FINDINGS:

A. INPATIENT WARDS AND EMERGENCY ROOM

- Dates of data collection: beginning of day shift 22 Jan 90 through the end of night shift 28 Jan 1990.
- 63% (19) of all inpatient wards (30) were surveyed.
- Response rate to the survey was 91% (384/420 total shifts for which to report data).
- Documented 'lab runs' were not counted in total numbers however, numbers indicated under 'lab' were assumed to be patient transports and were counted as patient transports. Directions on the data collection sheets clearly stated data was to reflect patient transports only.
- Total number of transports documented was 1409.
- Breakout of transports by shift (D/E/N) was 1144/207/58.
- Weekend transport requests accounted for 8.8% of all requests and the breakout by day was: Saturday = 61/15/2; Sunday = 30/1/3. Forty-five per cent of weekend transports were requested by the ER.
- Weekend data was reported by 47% (9) of the wards surveyed.
- Including weekend data, the average number of transports per week requested per ward = 65. (Excludes the ER)
- Excluding weekend data, the average number of transports per week requested per ward = 61. (Excludes the ER)

Appendix A cont.

HSHL-RMN

14 MAY 90

SUBJECT: PATIENT TRANSPORTATION SYSTEM

- Transport requests by ward are listed below. The wards marked by an asterisk (*) submitted the full 7 days data.

*Ward 64 = 177	*Ward 65 = 56
Ward 57 = 138	*Ward 66 = 55
*Ward 75 = 103	*Ward 51 = 39
*Ward 68 = 102	Ward 46 = 36
*Ward 56 = 95	Ward 74 = 31
Ward 58 = 95	Ward 41 = 27
*Ward 73 = 78	Ward 47 = 24
*Ward 67 = 76	*Ward 52 = 20
*Ward 61 = 67	Ward 71 = 10
* ER = 178	*Ward 53 = 2

- Eighty-eight destinations for transport were noted*. Seventy-four (84%) of these locations were in a vertical relationship (not on the same floor) to the pick-up point and represented 93% of the total number of transports requested. (Therefore, the elevators must be used.) (The ER was not included in this tally. Sixty per cent of the ER transports were to Radiology which is in a horizontal relationship to the ER).

B. OUTPATIENT CLINICS

- Data collection time period was from 22- 26 Jan for 13 clinics and the ground floor Information Center, WRAMC.
- Total number of transports requested = 207 (excludes 136 requests for a wheel chair from the Information Center).
- Average requests for transport exclusive of the Information Center wheelchairs = 16 (n=13).
- The assumption was made that all the requests were reported even though few clinics reported data for a full five days.
- Sixty-nine destinations were documented, 88% of which are in a vertical relationship to the pick-up point. (This information does not include departures from the Information Center as no destinations were reported from the IC.)
- Clinics with the greatest number of requests were:
 - Radiology = 99 (Includes all areas for 5 days only and noting that Radiation Therapy was having an atypically light week).
 - Urology = 19 (4 days reported)

Appendix A cont.

HSHL-RMN

14 May 90

SUBJECT: INFORMATION PAPER - PATIENT TRANSPORTATION SYSTEM

C. MANPOWER REQUIREMENTS:

1. Percentages representing vertical transports for the inpatient wards, the Emergency Room and the outpatient clinics for the five day week (24 hours of data) were taken to give a conservative estimate of transports needing to be staffed during the heaviest part of the work week.

2. A time-in-motion study was conducted to determine the amount of time needed to transport a patient from the furthest pick-up point to the destination point. Maximum amount of time needed for a round trip was 15 minutes. This factor was used to calculate the number of personnel needed to support a patient transport system.

1403 vertical transports per 5 day week
x .25 hours per transport
 350.75 transport hours required per 5 day week

350.75 hours per week
 5 days per week = 70.15 hours per day (24 hr period)

70.15 hours per day
 8 hours of work per person = 8.77 = 9 people per 24 hrs.

3. These requirements are a conservative estimate with built-in management inefficiencies of round trips and limited scope of transport service (e.g. no horizontal trips). Management issues of location of dispatcher, communication mechanisms and full scope of the service to be provided, once decided, will permit a more accurate determination of manpower requirements.

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 Nurse Methods Analyst

Appendix B

PATIENT TRANSPORT SYSTEM

The Department of Nursing assumed responsibility for the Patient Transport System on 12 October 1990. The Chief Wardmaster is responsible for the administration of the Patient Transport System (PTS). The PTS NCOIC (GS-6) supervises assigned personnel and is responsible for the daily delivery of PTS services.

Presently the PTS operates from 0800-1530 Monday-Friday. During the first three months of operation the demand for PTS services increased from 833 transports in November, to 913 in December and 1213 in January. In addition to transporting patients, PTS personnel are responsible for locating and redistributing wheel chairs through out WRAMC.

The PTS utilizes Medical Hold personnel to deliver its services. Six to ten soldiers are available on any given day. Generally, one to two soldiers are assigned to X-ray, one to Physical Therapy, and one each to the Allergy and Dermatology clinics. The remainder of the available personnel respond to "on demand" requests from inpatient and outpatient units.

The use of Medical Hold personnel to accomplish the PTS mission is problematic at best. First, due to their status, it is impossible to estimate how many individuals will be available on any given day, and how many hours within the day each soldier will be available to transport patients. Daily formations, medical appointments, ADAPC meetings, group therapy sessions, Company responsibilities (details, CQ, CI Class, etc.), NCOPD, formal boards and hearings, personal business and separation briefings make it difficult for the PTS NCOIC to coordinate adequate coverage. Second, Medical Hold personnel lack the basic knowledge and skills required to monitor and maintain the transport equipment and to maintain a safe environment for the patient.

A facility the size and complexity of WRAMC warrants a PTS comprised of dedicated, permanently assigned personnel who have the basic skills and knowledge necessary to avoid injury to self and patients. The job description for Patient Transporter (WG 03) has been finalized and the Department of Nursing is in the process of submitting the requests to hire 12-14 individuals. This number will allow the PTS to provide patient transport services 16 hours per day Monday-Friday.

Appendix C

General Porter: duties

- Helping in the reception of patients and visitors and guiding them within the hospital premises.
- Transporting patients through the hospital.
- Delivering and collecting patients' food by meal trolleys.
- Delivering of stores to wards.
- Collecting and disposing of rubbish.
- Collecting of soiled laundry.
- Transporting medical gases from stores to wards and bringing back empty cylinders.
- Changing oxygen cylinders on wards.
- Transporting furniture and equipment.
- Moving furniture and personal luggage into and around the residences.
- Patrolling the hospital grounds and carrying out routine checks on offices and departments. Turning out lights, turning off electric and gas fires, locking departments and offices as required.
- The occasional manning of the telephone switchboard.
- Removing the bodies of patients who have died from wards to mortuary.

Reproduced from: Roberts, I. (1985). The patient and the portering service in hospitals. Hospital and Health Services Review, 81 (5), 221-5.

Appendix D
Cost Savings Analysis (patient transport only)

Assumptions:

Salary plus benefits per transporter: \$7.50 per hour.
Salary plus benefits per clinical professional/manager:
\$11.25.

Average time per run: 15 minutes.
Two runs per procedure

	Runs per year
Operating room	15,600
Physical therapy	28,800
Admissions/discharges	38,400
Radiology	93,600
Total	176,400

176,400 runs/4 runs per hour = 44,100 hours per year

Decentralized system

44,100 hours x \$11.25 per hour = \$496,125 per year

Centralized system

44,100 hours x \$7.50 per hour = \$330,750 per year

Savings

\$165,375 per year

Reproduced from: Kuhn, L. (1992). Centralized transport system combines savings and efficiency. Materials Management, 50 (10), 36-7.