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THE OUTPATIENT SERVICES DEPARTMENT AT TUCSON MEDICAL
CENTER: AN EVALUATION FROM AN OPERATIONS MANAGEMENT
PERSPECTIVE

The University of Arizona

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THE OUTPATIENT SERVICES DEPARTMENT AT
TUCSON MEDICAL CENTER: AN EVALUATION
FROM AN OPERATIONS MANAGEMENT PERSPECTIVE

by

Teresa Isabelle Campbell

A Thesis Submitted to the Faculty of the
DEPARTMENT OF MANAGEMENT AND POLICY
In Partial Fulfillment of the Requirements
For the Degree of
MASTER OF SCIENCE
In the Graduate College
THE UNIVERSITY OF ARIZONA

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STATEMENT BY AUTHOR

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for her motivation, support, and encouragement
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ABSTRACT

Hospitals are suddenly in the midst of a dynamic, changing environment: rather than reimbursement based on actual cost, fees are established by the type of illness and characteristics of the patient. Therefore, hospitals are searching for ways to increase revenues, productivity, and cost-containment.

This thesis focused on the Outpatient Services Department (OSD)-- what its objectives are, how it operates, and whether it is effectively being used to increase revenue or decrease costs. The OSD was also evaluated in the areas of facilities and procedures. Further, a critical incidents survey was used to solicit patients' opinion of the OSD. In examining the marketing impact, it was found that OSD serves as an important public relations unit for the hospital and thus should be a separate organizational unit.

The results of this thesis may enhance the relocation of the Outpatient Services Department to another section of Tucson Medical Center.

CHAPTER 1

INTRODUCTION

The health care industry has not as yet captured the full benefits of operations management. In the early 1960s, time-motion studies were conducted and queuing theory was applied, but these were only minor improvements within the complex health care environment. Since then, managers have defined the difference between services and manufacturing. With this greater understanding of the characteristics of service organizations, operations management has become more effective in its resolution of the problems facing hospitals today. These improvements, combined with the trend toward increased productivity and reduced costs throughout the health care industry, are renewing hospital administrators' interest in operations management.

This thesis is a study of the Outpatient Services Department of Tucson Medical Center conducted by the author over a period of eight weeks. The objective of the study is to present any information that would facilitate an effective relocation of the Outpatient Services Department. The author gathered all data and conducted all observations presented in this thesis. Since hospitals are a part of the service industry, an introduction to services is called for.

The purpose of this chapter is to review the health care industry as compared to the manufacturing industry. A general overview of the two environments is presented and then a review of the differences

between service and manufacturing operations is presented. Finally, the current environment in which hospitals operate is introduced.

The Health Care Delivery System

Previously, many operations managers viewed the hospital as a production system. The patient, or the health of the patient, was the product and the physical hospital and staff were the tools of production (Ruppel and Grazman 1982). However, this point of view may not be realistic. Figure 1.1 illustrates a typical manufacturing plant which draws its resources from one market, pool A, and then transforms those resources during processing so they can be sold in another market, pool B. A hospital, on the other hand, functions more like a recycling plant. The facility draws its resources from the same pool that it will eventually deposit its processed goods into. Figure 1.2 shows that, although transformation does occur, the market is the same for both inputs to and outputs from the system. Under these conditions, the hospital's product is actually the health service itself. The patient is an entity that flows through the facility, and the patient's well-being is actually one of many quality measurements.

In order to determine successful performance, hospitals must recognize that their medical services are their products. A manufacturing plant can quantifiably measure a finished product before releasing it to the market. As long as the product maintains its expected useful life, it will be considered satisfactory by the customer. A service, however, is not as easily quantified. The success

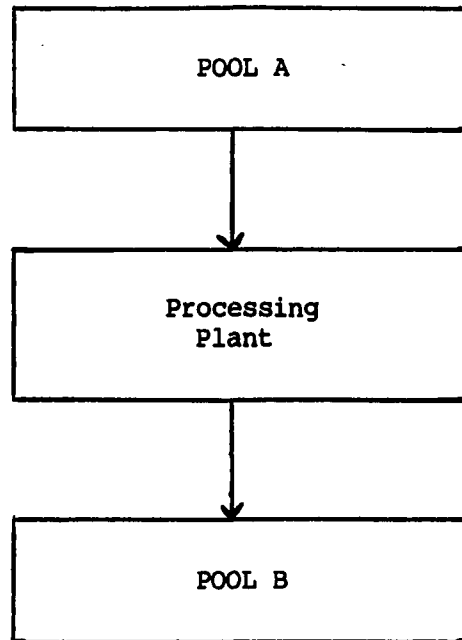


Figure 1.1 The Environment of a Manufacturing Company

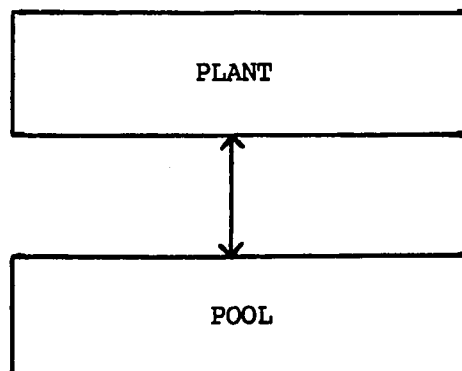


Figure 1.2 The Environment of a Hospital

of a service is a combination of both the quality of the service and the customer's perception of how that service was performed (Fitzsimmons and Sullivan 1982). As applied to a hospital, the satisfaction of the customer is based on his health as well as his perceptions of how the health care was administered. Therefore, when the health service is viewed as the product, both the quality of service and the influencing of a customer's opinion of the service must be addressed.

Service Characteristics

Service facilities offer several considerations that are not applicable in manufacturing. With an understanding of these unique traits, the operations manager can better understand the health care environment. Inputs to a service facility are different from resources (Fitzsimmons and Sullivan 1982). The input is the customer himself. The patient usually arrives at the hospital at random intervals, bringing with him a unique demand for the service. The resources are the tools available to the service manager that enable him to perform the service. Medical resources include the staff, inventory, equipment, and physical hospital facility. In order to perform its function, the service system must interact with the customer input system. This interaction brings several unique characteristics into consideration. Following is an explanation of six features presented by Fitzsimmons and Sullivan (1982) and Sasser, Olsen, and Wykoff (1978): participation, simultaneity, perishability, labor intensiveness, intangibility, and measurability.

Participation

Since the customer is a participant in the service process, more attention must be paid to facility design than is required for manufacturing facilities. The hot, greasy, noisy factory in which automobiles are made is of no concern to the prospective buyer. In contrast, however, the surroundings at the dealer's showroom may affect the customer's purchase decision. To the consumer, service is an experience that happens within the environment of the service facility. The overall quality of the service may be enhanced if the facility is designed from the customer's perspective. Special attention should be paid to interior decorating, furnishings, customer convenience, noise levels, and even colors in order to influence the consumer's perceptions. Fitzsimmons and Sullivan (1982) illustrate this idea: "Compare the feelings invoked by picturing yourself in a stereotypical bus station with those picturing yourself in an airline terminal." The realization that the customer can play an important part in the service process is very important. The performance of a service can be directly affected by the knowledge, experience, motivation, and honesty of the customer. For example, the accuracy and completeness in which a patient provides his medical history can greatly influence the effectiveness of the attending physician.

Simultaneity

Another distinctive characteristic is that services are both produced and consumed at the same time, and, therefore, cannot be stored. Inventory cannot be used as a buffer to absorb fluctuations in

demand. A manufacturing facility operates as a closed system, with inventory separating the production system from consumer demand. Services operate as open systems, with the full impact of demand variations being transmitted to the system. Inventory can also be used to buffer the different stages in a manufacturing process. In a service system, customers must wait. Instead of inventory control problems, many services focus on queuing or waiting problems.

Intervention for quality control purposes is often impossible when the service is simultaneously delivered and consumed. Manufacturers can inspect a product before delivery to ensure the consistency of output; services must rely upon other measures. One possibility for an alternative measure is to limit the discretion of service employees through the use of standard procedures.

The customer and provider must be brought together before production and consumption can occur simultaneously. Therefore, service facilities have a limited market from which they can attract customers. If the service cannot go to its clients, effective marketing techniques must be employed to attract customers to the service facility. Once the consumer is inside the facility, other promotional strategies can be used. Sasser, Olsen, and Wykoff (1978) provide this example: "A restaurant is able to use point of sale literature (the menu) and personal selling (waiter's suggestions) to increase the size and yield of the sale."

Perishability

The idea that a service is a perishable commodity is crucial to the effective management of service operations. A hospital bed not used or a physician sitting idle for one hour are examples of an opportunity lost. Because a service cannot be stored, when it is not used, it is gone forever. If demand were constant then the utilization of service capacity would not be a problem. Unfortunately, the demand for a service is at least as variable as that for manufactured products. Usually, service demand is cyclic with a substantial amount of variation between the peaks and valleys. In Los Angeles, the demand for emergency medical service was found to vary from a low of 0.5 calls per hour at 6 am to a peak of 3.5 calls per hour at 6 pm.

The operations manager has three basic options when providing a service with variable demand and a perishable capacity to provide the service. First, he can smooth the demand in three manners: (a) by using an effective appointment schedule or (b) by using price incentives (ie, proposing reduced rates during low-volume periods) or (c) by using marketing to discourage non-emergency visits at peak times. Second, he can alter the capacity of the service in three ways: (a) by employing part-time help during peak hours or by (b) scheduling workshifts to adjust personnel needs as demand varies (ie, staff more nurses at peak hours) or (c) by increasing the consumer self-service features of the service (ie, have the patient fill out medical history and insurance forms.) Finally, the service operations manager can take the passive approach and just permit customers to wait. By waiting, the consumer allows greater utilization of service capacity.

When an organization rewards a customer for waiting, as do airlines who offer discounts to standby passengers, the customer will not usually object to the wait. The rewarded wait-time may, in fact, enhance a customer's opinion of the service quality when it is believed that the service respects the value of the client's time. An interesting study could be conducted to determine how discounts in medical care could affect the utilization of the emergency ward. Non-acute cases might alleviate the burden of an over-crowded facility by receiving a discount for waiting.

Labor Intensiveness

The critical resource that determines the effectiveness of a service organization is its labor. Like manufacturing, services have a problem keeping up with technology. Instead of machines and test equipment, in a service, it is the skills of the labor force that become obsolete as new knowledge becomes available. In order to close the technological gaps, an expanding service organization can recruit new labor. However, the only successful strategy for a stable service facility where seniority is important may be continuous retraining.

Work activity in services is person-oriented rather than thing-oriented as in manufacturing. Personalization may be increased through the introduction of automation in order to eliminate relatively routine, impersonal tasks. This enables the server to concentrate on the remaining work. However, increased personal attention creates the opportunity for variability in the service provided. Although the service manager must recognize this relationship between service

personalization and variation, it is only negative when the consumer perceives a disparity in the quality of service. Most consumers expect to be treated fairly and to be given the same service others receive. Consistency in a service facility can be ensured through effective standards and proper training procedures. The most common method of monitoring the uniformity of a service has been through a customer complaint system since most service managers find it hard to justify the cost of periodic administrative screening.

Given the close interaction between the server and the customer, employee relations take on a greater significance. In manufacturing, auto workers with complaints against the firm have been known to sabotage the product on the assembly line. Usually, final inspection of the product will prevent the defective automobile from reaching the consumer. However, because its employees are the firm's only contact with consumers, disgruntled service employees can do irreparable harm to the organization. From a service manager's perspective, the attitude of an employee is just as important as his performance. The marketing campaigns of some hospitals emphasize the value of labor relations in the service industry: these hospitals differentiate themselves from other facilities on the basis of greater patient interaction and friendly, personal attention. "Since the hospital desires to be the patient's hospital-of-choice in order that the exchange relationship may continue, an effort is made to provide the necessary amenities to the patient." (Cooper, 1985)

Intangibility

Intangibility is another unique feature of services. Products are tangible items where services are often ideas or concepts. This presents a dilemma for the consumer. When purchasing an automobile, a customer can look it over, sit in it, and test its performance before making a purchase decision. In contrast, a service customer must trust the reputation of the firm since he cannot judge the product's value and quality prior to its delivery. Registration, licensing, and governmental regulation have been implemented to assure the consumer of certain standards of performance. However, the burden of convincing the customer of service reliability falls upon the service alone. Since the service itself is often available at several other facilities, i.e., health care service is available at several hospitals, marketers may want to highlight the manner in which the service is delivered as well as the reliability of the service.

Measurability

One of the most frustrating characteristics of a service for operations managers is the difficulty in measuring output. "Some measures of service emphasize quantity without respect to qualitative differences; others emphasize quality of services performed." (National Research Council 1979) Unfortunately, we have yet to discover an adequate method of measuring both. In order to appreciate the difficulty in measuring services, an understanding of the difference between service intensity and service duration is necessary. Service intensity is the quantity of services received by a customer during a

particular period. This is usually counted on a per day or per illness basis. Service duration is the length of time over which the service was administered. This is quantified in minutes, hours, or days to determine the length of stay. Measurement difficulty stems from the fact that both intensity and duration are important issues, yet each has its own measurement.

Herein lies the problem: most service facilities usually have more than one important criterion (ie, quality health care at a minimum cost), instead of a single, critical concern. Another problem is that the evaluation of a system's performance based on output alone may not be entirely valid since this assumes a homogeneous input. Perhaps a better evaluation of service performance is a measure of change in each consumer from input to output state.

The Health Care Industry

With the above insight into the unique characteristics of service industries overall, a more focused view of health care can be presented. The health care industry is currently in a transitional period. All sectors of health care are becoming more competitive and market-driven. Rather than simply reimbursing providers on the basis of cost, the major purchasers of health care--federal and state governments, employers, and individuals--are beginning to negotiate for services. Third party participants, such as Medicare and Blue Cross/Blue Shield, are using a Diagnostic Related Group (DRG) system to determine the amount of payment based on the patient's illness, instead of the hospital's cost of care. This turbulent environment often obscures two significant facts: 1)

health care is the second largest industry in the United States, following only defense, and 2) health care is considered a growth industry.

The following statistics, documented by the Hospital Corporation of America (1985), provide an overall picture of the medical environment. Health care expenditures are expected to increase from \$420 billion in 1985 to \$660 billion by 1990; hospitals account for over 40 percent of the current total disbursements. Industry analysts predict growth to come from outpatient care because inpatient admissions have declined 10 percent since their peak level in 1981. The average length of a patient's stay declined 4 percent in both 1983 and 1984; the current average is approximately seven days. This decline has been attributed to new technology, improved productivity, alternative levels of recuperative care, and increased cost of inpatient care. Expectations are that stabilization within the industry is close at hand since only the acutely ill are admitted to hospitals overnight. The average patient day use rate, which has fallen nearly 20 percent over the past three years, dropped to 950 patient days per 1,000 population by the end of 1985. Occupancy rates for United States hospitals fell to approximately 65 percent in 1985, down from 69 percent in 1984 and as high as 75 percent in previous years. Most of the reduction in the number of admissions and the average length of stay is attributed to patients under the age of 65. With employers imposing increased deductibles, copayments, preadmission certification, and utilization reviews as a part of their health benefit programs, the use of

facilities for the under-65 age group is more expensive to the individual than in previous years.

This decline in the health care industry is expected to continue as a result of increasing cost containment and competitive pressures. One result is a decrease in the number of nonfederal, short-term general hospitals--from nearly 6,000 in the mid-1970s to approximately 5,800 today. On the positive side, three trends should be noted. First, hospital outpatient visits increased 7 percent. Second, hospital and other health care services will soon be flooded with an aging population. The number of persons over age 65 will grow from 27 million today to an estimated 39 million by the year 2010. Third, demand is growing for specialized health care facilities and for alternative services, including medical transportation and home health care. In this search for alternative methods, applying operations management techniques have become vital as hospitals enter into a more competitive environment.

CHAPTER 2

SURVEY OF THE LITERATURE

In order to gain greater insight into the many challenges health care presents operations managers, a survey of the literature is presented. This review focuses on ambulatory or outpatient care since this thesis is a study of the outpatient services department of a hospital. This chapter begins with a definition of ambulatory services, then goes on to present a historical perspective. From there, various issues are discussed: managerial concerns, patient satisfaction, marketing, admissions, same-day surgery, and productivity. The project described in chapter three is better understood with this background information. Following is an introduction to ambulatory services.

The steady decline in the rate of hospital admissions can be attributed to both the relatively low cost and the improved quality of care offered by outpatient facilities. Ambulatory patients began to increase in number when studies that documented the cost of an overnight stay began to appear. One such study, conducted by the Johns Hopkins University in 1983, claimed that procedures done on an outpatient basis are 45 percent less costly than the same procedures done on a patient admitted for an overnight stay (Gilman 1984). When these studies were combined with improvements in medical technology that reduce the amount of pain and complications associated with medical procedures, insurance companies and other third party participants quickly changed their

reimbursement policies. Physicians were offered 125 percent of the normal payment when patients were handled on an outpatient basis as compared to only 75 percent if they were admitted to the hospital (Gilman 1984). Patients were told they could recuperate more quickly in the familiar environment and comfort of their own homes. All of these factors combined to form a relatively new market of patients who require only selected hospital services at infrequent intervals.

Ambulatory services are becoming the most important elements in hospitals today. Since a patient's initial contact with the health care system is usually through outpatient facilities, any first impressions created will have a profound impact on future health care expenditures and expectations. "There is much reason to believe that the method by which ambulatory medical services are rendered is a major determinant of the type and volume of other health services utilized." (Roemer 1981)

The Definition of Ambulatory Services

One way to understand ambulatory care is to envision all the care that is given to patients who do not reside in health care institutions during the time care is given. In order to distinguish the type of facility and provider personnel that are needed, it is useful to functionally divide care into primary, secondary, and tertiary care. Primary care is the point of entry for all non-emergency care. Secondary care includes less frequently occurring conditions requiring some specialized equipment. This category includes procedures utilizing several staff disciplines, such as physicians, nurses, dieticians, and pharmacists. Tertiary care involves highly unstable conditions where

technologically sophisticated equipment is necessary. A surgical team in a specialized facility with patient-monitoring and life-support equipment would fall into this division. Services such as home care, preventative care, and health education are not generally considered ambulatory services. (Meshenberg and Burns 1984; Palmer 1983)

A Historical Perspective

In the past, outpatient clinics provided free care for the poor and an aura of charity surrounded the facilities. It was reported that physicians had developed certain habit patterns and attitudes in a period where they were often unwilling "volunteers" forced to provide outpatient services in order to maintain position and privileges within the hospital medical staff. These habit patterns became normal, even expected, behavior that was difficult to change (Stimson and Stimson 1972). Patients dreaded the day they had to enter an outpatient clinic. Despite this harsh beginning, outpatient facilities have continued to flourish and have almost completely shed their previously sullen reputation.

The number, range, and complexity of hospital outpatient departments have grown considerably since the 1920s. Milton Roemer (1981) presents the following historical view:

In 1926, there were about 1,790 outpatient departments. The American Medical Association (AMA) estimated in 1922 that almost 8 million (out of a normal population of about 107 million) persons were being served by hospital clinics. In a 1919 study in Chicago, it was reported that, from a sample of families that excluded any who had applied for "general charity", 18 percent had received some form of hospital clinic service in the past year. . . . In the depression years of the 1930s, growth was understandably rapid. Although programs of voluntary health

insurance to support private medical and hospital care have grown since the 1930s, their benefits have been largely confined to inpatient hospital and medical service. As a result, the costs of ambulatory care have remained predominantly a personal responsibility, and accordingly increased numbers of low- or even middle-income families have continued to seek care at hospital outpatient departments. . . . Today, the hospital outpatient department is probably the most accessible setting for delivery of organized ambulatory health services (OAHS) in the United States. The nearly 264 million patient visits made to American outpatient departments in 1977 is the largest volume of OAHS encounters in any clinic setting, with the exception of private group practices.

Mark Tatge (1985) reported on several hospitals that confirm the above trend in increased outpatient admissions. Fairview Community Hospital in Minneapolis documented that their outpatient visits rose from 21,699 in the first quarter of 1984 to 28,954 in the first quarter of 1985--an increase of 33.4 percent. Another Minneapolis hospital, Health Central System, claimed its outpatient admissions expanded 16 percent during the same period--from 31,427 to 36,722.

Organizational and Managerial Issues

As a result of this growth, many hospitals are expanding beyond traditional inpatient services to provide comprehensive primary care. Organizationally, however, most hospitals are structured to provide effective and efficient inpatient services; ambulatory services have traditionally been secondary in status. Within this low-priority environment, outpatient facilities have had difficulty in recruiting personnel, competing for hospital resources, and marketing their services. The current trend to enhance the status of ambulatory care is largely due to the realization that primary care contributes

significantly to the financial stability of a hospital. As outpatient services offer greater profits, the balance of power and status may shift away from inpatient care.

Until then, hospitals may find it difficult to attract competent managers to an area that holds a second class status (Williams 1983). Since most health care managers are involved with inpatient care, they would most likely avoid the frustrations of running a low-priority unit effectively. Also, these managers would have relatively little knowledge of organizing and maintaining high quality services in the non-technological, ever-changing environment of an outpatient facility. Ambulatory care requires ongoing and direct patient contact in order to survive; its managers must have excellent public relations skills.

Patient Satisfaction

One of the most important elements in public relations is the monitoring of client satisfaction. When an examination of the hospital system is done through the eyes of the patient, inconsistencies are usually easy to identify. For example, some appointment systems allow walk-in patients to be seen before patients with an appointment (Stamps 1978). In this case, does an incentive exist that encourages the patient to make an appointment? Aren't there greater rewards for simply walking in? This is a clear example of conflicting perspectives. The hospital would prefer that patients schedule an appointment, but the patient doesn't observe any reward for doing so. In fact, the patient quickly learns that he can minimize his own time in the system by dropping in unannounced.

As one might expect, the patient's view of reality may not only conflict with that of the provider, it may even entirely contradict that of the provider. For example, a patient might disagree with a physician's diagnosis or may only partially agree to follow the prescribed treatment. Given that these differences in perspective exist, hospital administrators may question whether it is worthwhile to even consider the patient's view of reality; after all, an unlimited supply of patients appears to exist while the supply of facilities is limited. Paula Stamps (1978) points out that the behavior of an individual is based on his perceptions of reality, not an objective evaluation of the situation. In regard to health care, the following factors have been theorized to influence an individual's decision to seek medical care: the perceptions of the severity of the illness, attitudes towards the ability to cure the disease, expectations of the physical threat of the condition, cultural variables, demographic variables, and previous satisfaction with medical care.

This last factor is the most important reason for administrators to consider the patient's view of reality. Patient satisfaction has been related to both patterns and types of utilization, including the pursuit of either acute or preventative care. For example, patients are more likely to choose a specialist when their experiences have left them highly satisfied with technical competence but unsatisfied with interpersonal contact. The level of patient satisfaction even affects patient compliance with medical advice and how promptly the patient pays his medical bills (Stamps 1978).

In terms of evaluation, a patient's opinion should be viewed as the overall result of bringing the health care service and the individual together. The results of patient opinion surveys are usually utilized in two ways: First, the outcome is used as a standard to evaluate quality; and second, the results are used to enhance subsequent types of interaction between the patient and the system. The determination of which of these two uses is legitimate appears to be highly controversial in the literature. Both philosophically and methodologically, it is hard to prove the validity and importance of a patient's perceptions. However, most studies do agree that a hospital can be more effective in the marketing and promotion of its services when its perceived strengths and weaknesses are known. Inguanzo and Harju (1985) provide the best summary: "Any positive impressions that a patient takes with him following a hospital stay will pay the hospital future dividends in the form of increased potential for repeat business and positive word-of-mouth promotion."

Marketing Ambulatory Care

Patient satisfaction and positive impressions lead to the relatively new concept of marketing in the health care field. A good strategy for bringing marketing into health care could be in the area of preventative medicine. Some examples of preventative care marketing are the campaigns that have been launched to make the public aware that many immunizations, such as measles vaccines, are available through local health departments. However, the marketing of ambulatory care

departments may actually be more effective than the marketing of preventative care.

Philip Cooper (1985) points out that, regardless of whether it's through family practice, general medicine, or pediatrics, patients and physicians establish long-term relationships in primary care. As trust and understanding are developed over time, the physician can address issues which affect the patient's health, even if they are unrelated to the current illness. Through their physicians, primary care patients receive information about preventative medicine as well as procedures on how to cure the immediate problem. Continuous contact with his physician enables the patient to educate himself about medical services, technology, and procedures. Therefore, primary care offers many highly desirable marketing aspects.

Of course, health care offers several unique problems to marketers. The first that comes to mind is the stigma of the word "marketing". Many people believe that marketing is the same as hard selling. In a society that believes health care is everyone's right, the expectation is of quality health care at a low cost. The idea that health care must be strategic or rationed in its pursuit of patients is unacceptable. Related to this problem is the belief that health care should not be profit-oriented. Making money from the disabled and sick is contrary to overall social values. As society begins to realize that the survival of the health care system depends upon its financial soundness, this issue will fade from people's minds. While problems

with public opinion are currently relevant, preconceptions about marketing and the charity of medical facilities are slowly changing (Cooper 1985).

Another difficulty for marketers in the present health care system is that physicians usually act as the agent for their patient. The patient's control over the care he receives is very limited; therefore, physicians must be the targeted market, not patients.

Despite these problems, marketing can provide benefits to hospitals, especially in outpatient environments. With societal trends toward preventative health care, physical fitness, and competitive medical facilities, effective marketing can capture potential patients as well as educate them about the many services available.

Admissions and Preadmissions

When a patient decides to utilize a health care facility, the admitting begins. This, too, has become more complex as the medical environment changes. In order to avoid the high costs of an overnight stay, the current trend is that prior approval must be obtained before a patient is admitted. Since outpatient care is being fully covered, and encouraged, by third party reimbursers while inpatient care is being reimbursed solely on the basis of the type of illness, hospitals are establishing new standards for admissions. The most prevalent standard is a screening program prior to entering the hospital.

Karen Hunt (1983) describes the process of most screening programs:

Requests for admission are usually made by the admitting physician's nurse or assistant. The requests are approved or

denied by a nurse reviewer at the hospital, who can turn to a physician consultant if any questions arise. If the request is turned down, the admitting physician may be able to overturn the decision if he can submit evidence showing why hospitalization is necessary.

Generally, paperwork is kept to a minimum. For many programs, the requests are handled over the telephone. When requests that are called in are denied, written explanations are usually sent to the physician.

Although the actual screening process may be the same, the elements of care that are reviewed vary greatly from hospital to hospital. Some facilities only review physicians who hospitalize patients at a higher than average rate. This is done to force physicians to plan admissions better. Other programs screen only certain medical procedures. These procedures are the ones usually performed in ambulatory surgery or outpatient facilities. They are only scheduled as inpatient procedures on rare occasions. When these cases are denied, they are either switched to outpatient treatment facilities or rescheduled from an evening to a morning admission. Other screening programs operate on a strictly voluntary basis.

Proponents of preadmission review report that it forces physicians to take a hard look at their admissions decisions (Hunt 1983). The physician must prove that there is a need to perform the surgery, that the procedure must be done on an inpatient basis, and that any preoperative days scheduled are absolutely necessary. Of course, the ultimate goal of screening is to alter physicians' approach and inspire them to think about outpatient treatment first. Physician response has been somewhat less than enthusiastic; most accept it as another bureaucratic procedure required in the new cost-conscious health

care environment. Physicians realize that preadmission is one way for the hospital to hold down costs and preserve the fee-for-service philosophy. They also realize that hospitals can use preadmission to project future short-term cash flow (Blanchet and Switlik 1985). Therefore, most physicians have been cooperative.

Same-Day Surgery

With advances in technology, general surgery is also tending toward greater use of ambulatory facilities. Same-day surgery is the procedure by which a patient arrives early in the morning, enters surgery an hour or two later, and then, usually, is ready to go home by the end of the day.

Joyce Riffer (1986) describes three major trends in surgery that have encouraged outpatient care:

--Increasing use of lasers. The use of lasers, established in ophthalmic procedures, is extending to gynecology, gastroenterology, neurology, and ear, nose, and throat applications.

--Less invasive surgical approaches. The repair or removal of diseased tissue with little disruption of the surrounding area will be made possible by sophisticated endoscopes and percutaneous ("through-the-skin") instruments containing lasers and fiberoptic and ultrasonic equipment.

--Increasing range and use of surgical implants. Partial artificial hearts, cochlear implants, and artificial knee and hip joints represent only a few developments in this category.

Improvements in local and general anesthesia can also be included in the above list.

Of course, cost containment is the prime motivator. In the early 1970s, hospitals realized that the sooner a patient got back on his feet, the lower their manpower and overall cost of care would be.

However, efforts to shorten hospital stays were focused on changes inside the hospital itself. Some hospitals tried to keep their operating rooms occupied seven days a week. Others researched the "two-shift surgery" alternative in which a fresh group of operating room personnel were brought in at 3 pm. However, hospitals soon discovered that scrub nurses and anesthesiologists are in limited supply; their costs would soar if they had to offer enough salary incentives for specialized staff to work the night shifts. Now that ambulatory surgery units are being utilized some hospitals are moving in the opposite direction--their operating rooms are only used in the morning, five days a week (Lavin 1982).

Hospitals were prompted to set up ambulatory surgery units in order to capture higher reimbursement rates. Lavin (1982) points out that when a federally funded study in 1977 found that outpatient surgery was up to 50 percent less expensive than the same inpatient procedures while still maintaining equal quality, third parties began to encourage its use. Insurance companies often proposed full coverage for surgeries performed on an outpatient basis while covering 80 percent or less for the same inpatient procedure.

John Lavin (1982) outlined other factors which contributed to the decision of establishing ambulatory surgery procedures. In order to avoid bed shortages, large hospitals in growing communities encourage surgeons to operate on an outpatient basis. In contrast, hospitals which have beds readily available are less likely to have ambulatory surgery facilities. Outpatient services are also being more heavily

utilized because physicians' surgical patterns have shifted. Physician scheduling convenience is another reason hospitals have ambulatory surgery facilities. Surgeons prefer to walk from the main operating room to the outpatient operating room in the same hospital instead of driving to a freestanding facility. They find they can utilize their time better; if a patient is late for an outpatient procedure, the physician can do his rounds at the hospital until the patient is ready. Finally, patients feel more secure in a hospital outpatient facility than they do in a freestanding clinic. Patients used to be reluctant to accept outpatient surgery; when a hospital facility assures them of the high-quality, high-priority care that is available to inpatients, they respond favorably to outpatient care.

Productivity and Performance

"Productivity is simply the relationship between the outputs generated from a system and the inputs provided to create those outputs." (Sink 1985) As might be expected, the measurement of productivity in health care services is not as easy as the above statement implies. The biggest problem in measuring the productivity of health care arises in the definition of output. If a patient dies while in the hospital, since the output was death, does it necessarily mean that the health care was inefficient? If a patient leaves a hospital in perfect health, since the output was good health, does that necessarily mean the the care was delivered as effectively and efficiently as possible? As distinguished by the National Research Council (1979), productivity can be measured as either a process or an outcome. An

outcome measurement is used to specify the health or condition of a patient. Process measurements indicate the number and type of services performed by hospitals. The drawback to using process measures is that they denote how closely hospital activity follows a given standard without questioning the adequacy or correctness of the standards themselves. Both process and outcome measures provide useful information to hospital administrators. However, neither is adequate as the sole measure of hospital productivity.

Matthew E. Kelliher (1985) provides insight into healthcare productivity. He emphasizes that productivity management has been brought about by the changes in reimbursement by third parties. In the past, hospitals had been able to pass the cost of any inefficiencies on to the third party reimbursers. Now, they must absorb low productivity costs themselves. Because labor constitutes the largest portion of a hospital's expense, the focus of this discussion will be on personnel considerations.

Kelliher goes on to clarify three misconceptions regarding productivity. First, contrary to current beliefs that an individual is responsible for his own work efforts, productivity is actually "the responsibility of management, not the worker." (Taylor 1911) Since management is responsible for the efficient allocation and use of its labor, then productivity is actually an indication of the effectiveness of management's decisions and actions. Ultimately, this effectiveness determines the cost of services and relates to management performance. Second, the achievement of high levels of productivity does not necessarily mean that the quality of services will be decreased. It is

possible to increase productivity and also increase the quality of care at the same time. Finally, the trend toward greater productivity does not imply that services provided will become impersonal and similar to a production assembly line. This trend is merely a reflection of hospital administrators' attempts to control their costs and make sure that funds are not being squandered. These three considerations exemplify the idea that the control of its labor resources must be a long term commitment in the hospital industry.

Kelliher delineates three requirements which exist for the successful management of productivity. First, top management must understand and be committed to achieving all goals. Second, adequate management tools must be available. These include the dissemination of information and familiarity with the issues, as well as policies that support the appropriate actions. Finally, performance expectations must be clearly defined and they must promote management activity and financial accountability. With these requirements in place, and any misconceptions cleared up, productivity management can begin.

Kelliher describes the Consolidated Operational Reporting (CORE) system used at the University of California Medical Center at San Diego (UCSD). The first step in determining productivity is the categorization of inputs into three segments: direct technical, ancillary support, and administrative. Next, the outputs for these three categories are determined to be either direct departmental or weighted departmental. Direct departmental outputs are those that fluctuate very little with slight variations in the volume of patients.

For example, laundry will always have thousands of pounds of laundry to do daily; patient volume would have to increase or decrease significantly to alter the workload of the laundry department. This is also true for food service, pharmacy, and admissions. In contrast, weighted departmental outputs have labor requirements that fluctuate significantly with changes in volume. Examples of weighted departmental services are nursing, radiology, and emergency. The key to the CORE method of productivity measurement is the relationship between the labor input categories and the labor outputs. The sources and extent of variability are defined for each input/output combination. Weights are expressed in terms of work load units and are assigned as a relative measure of direct labor requirements for each procedure. In the CORE system, department managers are responsible for defining the overall quality monitoring criteria and the weights of quality in their area.

Kelliher points out that flexible budgets and management incentives are natural outgrowths from successful productivity management. Often, conflicting objectives between budgeting and productivity are found in a fixed budget environment. Kelliher provides the following example:

Suppose a department head hires a 50 percent variable appointment who works 7 to 11 am, Monday through Friday, and in the case of a volume increase, the department head exercises the prerogative to have the individual work up to 80 percent to cover the work load for that period. In the fixed-budget situation, that position is usually budgeted at 50 percent and the department head can be expected to exceed the budgeted labor expense even though labor costs of those hospital services have been minimized during that period. This situation is generally due to the fact that fixed budgeting is not sensitive to actual volume while productivity is.

Flexible budgeting may reduce the amount of discrepancy and contradiction. Forecasted and actual volume and mix of services are used to determine the expense for variable cost in a flexible budget. Labor utilization statistics are used as a base for this budget and are used in accordance with a performance target or standard. When consistency between budgeting and productivity has been achieved, management can then focus its efforts on productivity improvement methods such as staff incentive programs.

Throughout this chapter various aspects of outpatient care have been discussed: how satisfaction influences future choices, how changes in third party reimbursement have affected admissions, or how productivity budgets should fluctuate in accordance with patient volume. With an understanding of these issues, the project described in chapter three can be viewed with sufficient background knowledge.

CHAPTER 3

OUTPATIENT SERVICES DEPARTMENT

The purpose of this chapter is to delineate the reasons behind this study and to present the current operations of the hospital Outpatient Services Department. First, the department is described in terms of the three services it provides: preadmission testing, outpatient nursing, and outpatient laboratory. Then, the overall operations of outpatient services are discussed, followed by an explanation of patient flow through the system. Finally, the issues addressed by this study are presented. The description of the project begins with an introduction to the participating hospital.

Tucson Medical Center (TMC) is a 650-bed, acute care hospital serving all of Southern Arizona. Established as a community owned hospital in 1943, TMC treats approximately 85,000 patients annually. Three levels of inpatient care are provided as well as outpatient services: 24-hour emergency and trauma services, an ambulatory surgery center, and a full-service imaging department. TMC is a member of Voluntary Hospitals of America, Inc, and is a regional referral center for such specialized medical/surgical programs as cardiovascular, neurological, orthopedic, and neonatal intensive care.

Outpatient Services Department (OSD)

The Outpatient Services Department (OSD) at TMC is considering a relocation within the hospital facility. In order to implement an effective move for both the hospital and its patients, more information was required. This study was conducted to evaluate the manner in which current services are administered as compared to other methods. TMC requested this project in order to provide any information about OSD that would facilitate an effective relocation.

As indicated in Figure 3.1, OSD is a part of the Outpatient Resources Division. Its director is also in charge of the Chest/Allergy Clinic, but this study will focus solely on OSD. Three different groups of services are provided: outpatient laboratory work, outpatient nursing, and preadmission testing. Following is a description of each service and its importance to TMC.

Preadmission Testing

Since patients are now entering the hospital on the same day that surgery will be performed, the medical staff must complete all pre-operative procedures within one or two hours before surgery. In order to facilitate this process, an AM-admit (morning admission) room was set aside for patients who came in the day of their surgery, but after their surgery stayed overnight. Since most patients enter surgery from this AM-admit room, the medical staff can easily locate a patient and administer pre-operative care. However, the AM-admit room also created a hectic, assembly-line type of atmosphere with phlebotomists, shave nurses, and transportation staff entering and exiting as they attend

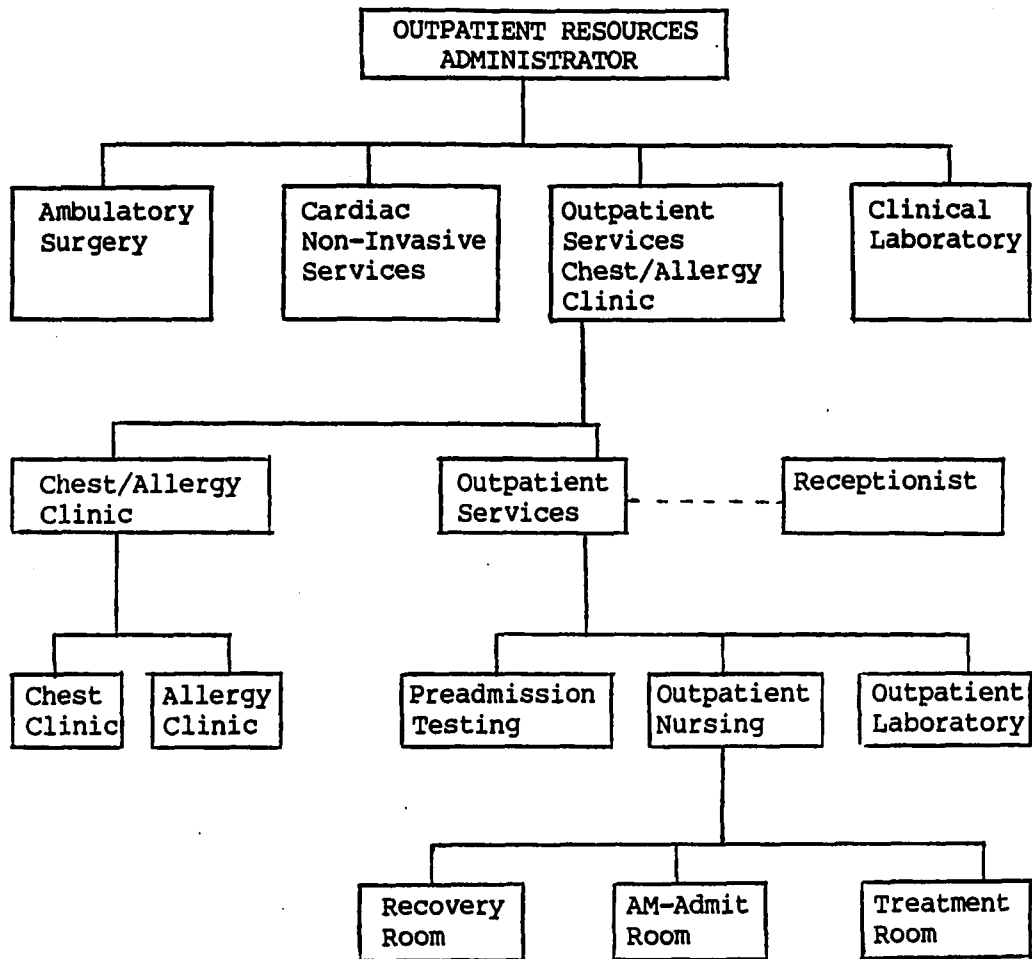


Figure 3.1 Organizational Structure of
TMC Outpatient Resources Department

patients, while nurses are collecting urine specimens, giving pre-operative treatments, and taking notes for their nursing care plan. In order to re-establish a personal approach to the delivery of pre-surgical procedures and to reduce the workload of the medical staff, TMC formed the voluntary service of preadmission testing.

The preadmission testing (PAT) group does interviewing, testing, educating, and familiarizing before the patient is admitted for surgery. It should be noted here that only procedures done in any of the main operating rooms are processed by outpatient services. (TMC has surgical procedures done in the emergency department and ambulatory surgery center, in addition to the main operating rooms.) PAT patients are usually morning admits. Some are outpatients that cannot be handled by the ambulatory surgery unit due to equipment availability restrictions, capacity constraints, or physician scheduling preference. PAT patients are also plastic surgery patients. The physician performs plastic surgery in his office and then has the patient transported, by ambulance, to the outpatient recovery room, which is also a part of OSD. PAT serves adults as well as children. The PAT team reduces the number of pre-operative procedures and the length of time required to prepare the patient during his short stay in the AM-admit room.

In manufacturing, this is called pre-processing or staging. Pre-processing minimizes the customer's wait and helps maximize the provider's efficiency at the time of service. For example, an automobile manufacturer builds a standard automobile and then adds the options requested by the customer at the time of sale. This is much faster, and more efficient, than waiting to build the entire car from

scratch once the customer specifies his desired options. Similarly, preadmission testing performs as many standard procedures possible before the patient enters the AM-admit room.

Two registered nurses (RNs) and one licensed practical nurse (LPN) work full-time to provide PAT services. Their current functions are numerous and diverse:

- Admissions paperwork is completed prior to surgery
- The patient is familiarized with procedures, with all questions answered, and informed as to where to report for surgery
- Patient routing is scheduled for x-rays, lab tests, and physical therapy treatments needed prior to surgery date
- Operating room slips are reviewed to see which physicians requested PAT
- OR slips in which PAT is not requested but the patient is categorized as an AM-admit or outpatient, the physician is called to see if PAT is required
- Test results are collected from various labs and noted on PAT patients' charts
- Lab results are sent to proper hospital department and/or to physician's office
- PAT interviews are scheduled
- Physician's orders are confirmed/clarified
- Abnormal lab results are logged, then physician is notified
- Patient history forms are completed so that physician and unit nurse have data available

- AM-admit nurse is notified of PAT patients arriving that day
- Arrangements are made to have patients meet with anesthesiologist during PAT interview, if possible
- Patient is notified of time he should arrive at AM-admit room prior to surgery
- Account numbers are assigned to patient records
- Patient is escorted to other labs or units when necessary
- Pre-operative procedures requested by physicians are reviewed and knowledge of surgery is utilized to make sure nothing is left out that can be done during PAT
- A list of expected PAT's is documented and distributed to various entrance lobbies
- Patient information, except billing data, is entered into the admissions computer
- Ambulances are called to transport plastic surgery patients
- Patients' charts are sent to main admitting
- Arrangements are made for patients to see a financial counselor, if necessary
- Patient records are sorted and physically distributed to the correct unit
- Plastic surgery patients are interviewed prior to the use of the outpatient recovery room and full payment is collected for the use of hospital facility
- Physicians' orders are taken over the telephone for morning admits that haven't had PAT, then delivered to the proper unit.

The PAT team has been cross-trained so that each can do the other's tasks. The work is currently divided such that one RN, who works from 06:30 to 15:00, conducts the actual patient interviews and collects any urine samples needed. The other two nurses, who work from 08:00 to 16:30 and 09:00 to 17:30, call the patients to schedule interviews and complete as much of the medical history possible. The patient is asked to bring any information with him on the date of the PAT interview that he did not have available during the telephone interview. The other PAT functions are interspersed between all three nurses. Figure 3.2 shows the total number of preadmission testing interviews for January through May of 1986. In order to relate the number of PAT interviews to the overall patient load in the main operating rooms, Figure 3.3 documents the total number of surgeries performed during the same time period, with total AM-admits and outpatients also shown. From these tables it can be calculated that 50 percent of all AM-admits and outpatients utilize preadmission testing before their surgery. It was noted through observation of the PAT staff that the average PAT interview was 23 minutes long. The shortest lasted 18 minutes and the longest endured 30 minutes. This includes the time required for the patient to provide a urine specimen, when applicable, but did not include any time the patient spent with the outpatient phlebotomist or other ancillary services such as cardiology or physical therapy. Currently, the PAT nurses schedule one interview every half hour. When the patient load exceeds this ideal, patients are staggered every 15 minutes and the other RN interviews the overflow patients. The

Month	Total
January	126
February	91
March	137
April	115
May	143
Total	612

Figure 3.2 Total Number of Preadmission Testing Interviews

Month	AM-Admits	Outpatients	Total Surgeries
January	184	41	663
February	145	40	601
March	225	52	738
April	230	45	695
May	265	54	797
Total	1049	182	3494

Figure 3.3 Total Main Operating Room Patients

most consistent peak load occurs on Monday afternoon, just prior to the pediatrics tour at 4 pm. For the convenience of the patients and their parents, PAT schedules interviews for children attending the tour as close to 4 pm as possible.

Outpatient Nursing

The outpatient nursing functions can be divided into three groups: morning admissions (AM-admits), outpatient recovery, and outpatient treatment. As described earlier, the first category, morning admissions, was established to centralize patients needing preparation for surgery. Before the four-bed AM-admit room existed, most patients reported to the proper inpatient unit at 4 pm the day before surgery, depending on the type of surgery to be performed. Then, the nurse working the late shift would administer pre-operative treatments. Phlebotomists from the main lab would come to draw blood at their convenience. By reviewing the bed schedules and the operating room schedules, transportation would determine which patients needed to be brought to the main operating rooms, where the patients were located, and the exact time the transfer was required. In other words, in the past, the patient was available at least twelve hours prior to surgery during which time each medical department could perform pre-operative procedures.

However, when third party reimbursers began discouraging overnight stays, patients were requested to arrive two and one-half hours before their surgery, on the same day. This meant that the patient was available to the medical staff for only one and a half hours (the main

operating rooms transfer patients to their area one hour before surgery so anesthesia procedures can be started). With the advent of morning admission, the previous pre-operative work flow procedures were inadequate. The various medical units could not get patients ready in time for surgery when patients were scattered throughout the hospital and only one and a half hours notice was given as to the location of the patients within the hospital. Thus, the AM-admit room was established.

This room is currently located in the gynecological surgery area, inpatient unit 300. It is a normal hospital room with one bathroom. Seating is available for one guest per bed patient. Almost all morning admits report to the AM-admit room prior to surgery. Then, after surgery, they are taken to the proper inpatient unit. One RN (and sometimes another), who works from 05:30 to 14:00, is responsible for: completing the admissions paperwork, reviewing the medical history, administering enemas, douches, or injections required prior to surgery, documenting patient belongings, clarifying physicians' orders, answering patient questions, obtaining the surgical release signatures, and preparing the patients' chart. Both men and women report to this same room. Privacy is maintained by pulling a curtain around the patient's bed. The few patients that don't enter surgery via the AM-admit room are usually pediatrics patients, patients whose physicians ask them to report to their inpatient unit, patients who will recuperate in one of the non-outpatient unit 300 rooms, and some patients who will recuperate in the outpatient recovery room. Of course, as mentioned earlier, patients admitted the day before their surgery report to the inpatient care unit in which they will eventually recuperate.

The second portion of outpatient nursing is outpatient recovery. This room, with two beds and two stretchers, was established as an intermediary area for patients that were well enough to leave the main operating area's post anesthesia recovery room (PAR), but too sick to be added to the patient load of a unit floor nurse. The recovery room is also utilized to admit patients classified as outpatient: those who come in two and a half hours before surgery, have surgery performed in one of the main operating rooms, return to recuperate in the outpatient recovery room after PAR, and then go home--all in the same day. Both male and female patients utilize the recovery room. Most require careful attention--vital signs must be taken every fifteen minutes and then charted. One RN, who works from 07:00 to 15:30 monitors these patients. The recovery room is located across the hall from the AM-admit room and is also a part of inpatient unit 300. It has one bathroom and can accommodate one or two guests per bed patient. The main purpose of the recovery room is to relieve the patient load in the PAR and on the floor units, while still maintaining quality care and personal interaction.

The third portion of outpatient nursing is the outpatient treatment room. This room was established to provide nursing treatments for intravenous (IV) therapies, such as blood transfusions and chemotherapy. Also, some biopsies are performed here. Before the treatment room was established, patients were admitted for an overnight stay whenever they required IV therapy. One RN, who works from 07:00-15:30, administers the treatments, which last from one to five hours.

This four-bed room is also located in unit 300, down the hall from the AM-admit and outpatient recovery rooms. It has one bathroom and can accommodate one guest per bed-patient.

Scheduling and the accommodation of patient load are coordinated among the outpatient nurses. The operating room schedule, which is available one day in advance at 3:30 pm, dictates the number of patients who enter the AM-admit room. When an overflow occurs, beds from the treatment room or the recovery room are utilized. The other medical departments have become accustomed to this procedure; if they can't find a patient in the AM-admit room, they look in one of the other outpatient nursing rooms. The schedules for the operating room and heart catheter lab define the utilization of the recovery room. Patients that have had a heart catheter procedure are taken to the outpatient recovery room for one hour to assure that the patient is stabilized. Scheduling in the treatment room is done by the RN attending that room. Appointments are taken by the RN and then documented on a Rolodex calendar. Walk-in treatment patients are accommodated as promptly as possible. When an overflow occurs, patients are either taken to one of the other outpatient nursing rooms, or chairs are brought in so that treatments can be administered as the patient sits down.

The unit clerks for the gynecological surgery area, unit 300, prepare the patient charts required for the AM-admits that haven't been interviewed by PAT. They also update a bulletin board, daily, that delineates the patient load in each of the outpatient nursing rooms. In addition, the clerks handle miscellaneous phone calls and complete some

Month	Treatment Room	Recovery Room	AM-Admit Room
January	48	88	175
February	47	77	136
March	43	83	152
April	54	87	174
May	50	100	224
Total	242	435	861

Figure 3.4 Patient Utilization of Outpatient Nursing Rooms

other paperwork. The outpatient nurses do their own charting and as much of their own paperwork as they have time for. Figure 3.4 documents the patient load for each room in the outpatient nursing area. When the patient load in all three areas is high at the same time, the manager for outpatient services utilizes her skills as an RN to administer care to the overflow patients.

Outpatient Laboratory

The final service provided by the outpatient services department is phlebotomy. The outpatient lab was established as a central area in which blood draws could be obtained on a walk-in basis. The main hospital lab uses runners who go from patient to patient, unit to unit, collecting blood samples and delivering them to the lab. Without the outpatient phlebotomist, a runner would have to be called every time a blood draw was required.

One phlebotomist, who works from 07:30 to 16:00, performs blood draws for PAT patients as well as outpatients who are utilizing one of

Month	Total
January	416
February	389
March	462
April	429
May	390
<hr/>	
Total	2086

Figure 3.5 Total Outpatient Laboratory Patients

the ancillary services or going in for an outpatient nursing treatment. Figure 3.5 displays the number of outpatient lab visits from January to May, 1986. Blood specimens collected are sent for analysis to the main lab through a vacuum tube. The phlebotomist is responsible for her own paperwork and inventory. The lab has two chairs to accommodate blood draws. During the peak patient loads (i.e., on Monday before the pediatrics tour), one of the PAT RNs and the OSD receptionist help the phlebotomist (i.e., by distracting the children or holding them still). The receptionist is cross-trained as a phlebotomist, so she handles any overflow in patient load. Likewise, when the receptionist is busy, the phlebotomist assists by greeting patients or answering the telephone.

The Overall Operations of OSD

With an understanding of the services provided by OSD at TMC, an overall picture of the entire unit can be presented. Figure 3.6 shows a partial layout of the one-story Tucson Medical Center facility. The OSD front office area and outpatient nursing areas have been blackened. The total square footage occupied by OSD is 2605, with the front office area

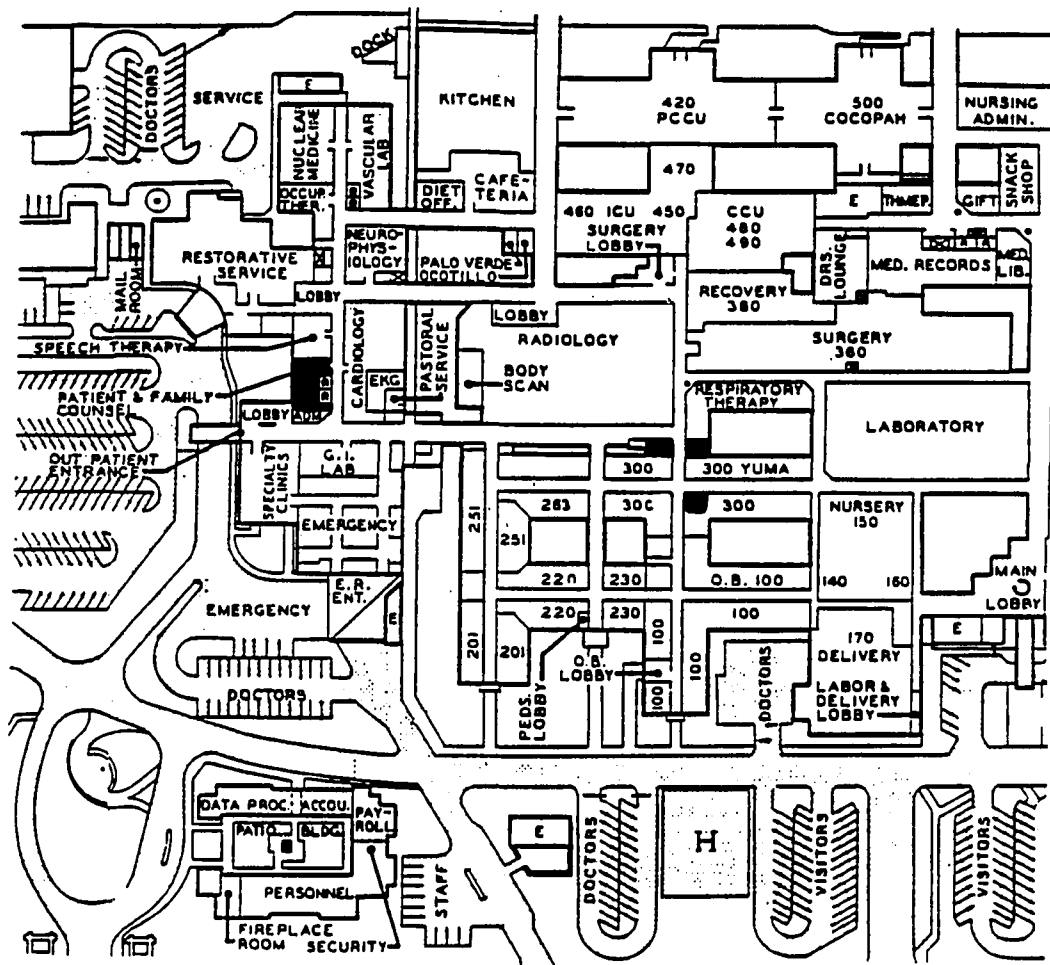


Figure 3.6 Layout of Tucson Medical Center

accounting for 1351 square feet. The farthest walking distance, from the outpatient lobby to the outpatient treatment room, is 405 feet. Figure 3.7 shows the layout of the front office area, with its perimeter darkened in order to highlight it. Each of the three front office exam rooms has one bed. These beds, combined with the ten beds in the outpatient nursing area, two chairs in the phlebotomy area, and two stretchers in the recovery room, comprise the entire OSD facility. The OSD is open from 05:30 to 17:30. The first patient arrives at the outpatient nursing AM-admit room at 05:30 in order to be ready for the first scheduled surgery time of 07:30. In the front office area, the first PAT patient arrives at 08:00. The last PAT patient arrives between 15:30 and 16:00. The last patient entering the recovery room arrives at about 16:00, and the last patient for the AM-admit and treatment rooms usually arrive between 12:00 and 13:00. The Outpatient Services Department was established in 1981 and operates Monday through Friday, with the outpatient nursing staff on call for Saturdays. In order to effectively fulfill their function, OSD interacts with several other hospital departments. Figure 3.8 delineates most of the interfacing departments.

Patient Flow Through OSD

The patient flow through OSD varies depending on the services required. To avoid confusion, it is assumed that a patient enters through the outpatient entrance, on the west side of the hospital, unless otherwise specified. (TMC also has a main entrance to the south

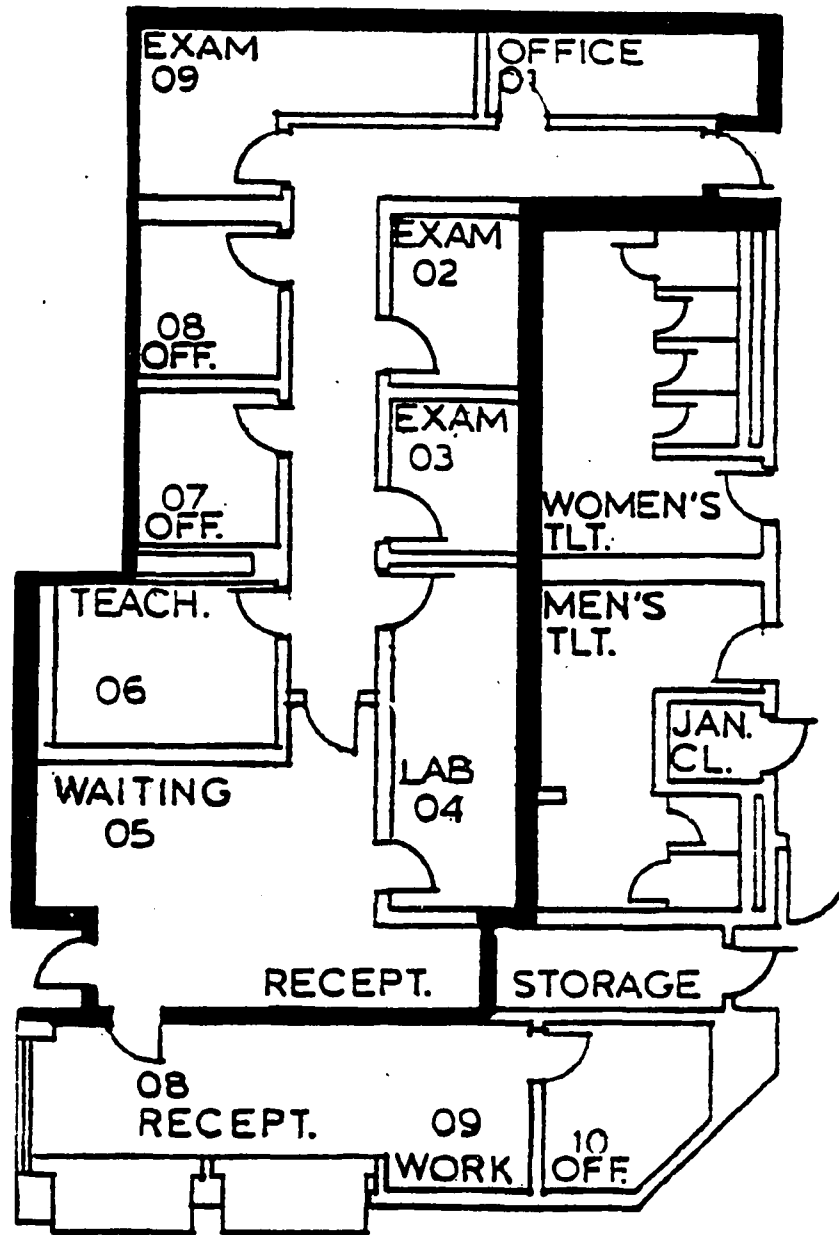


Figure 3.7 Layout of OSD Front Office Area

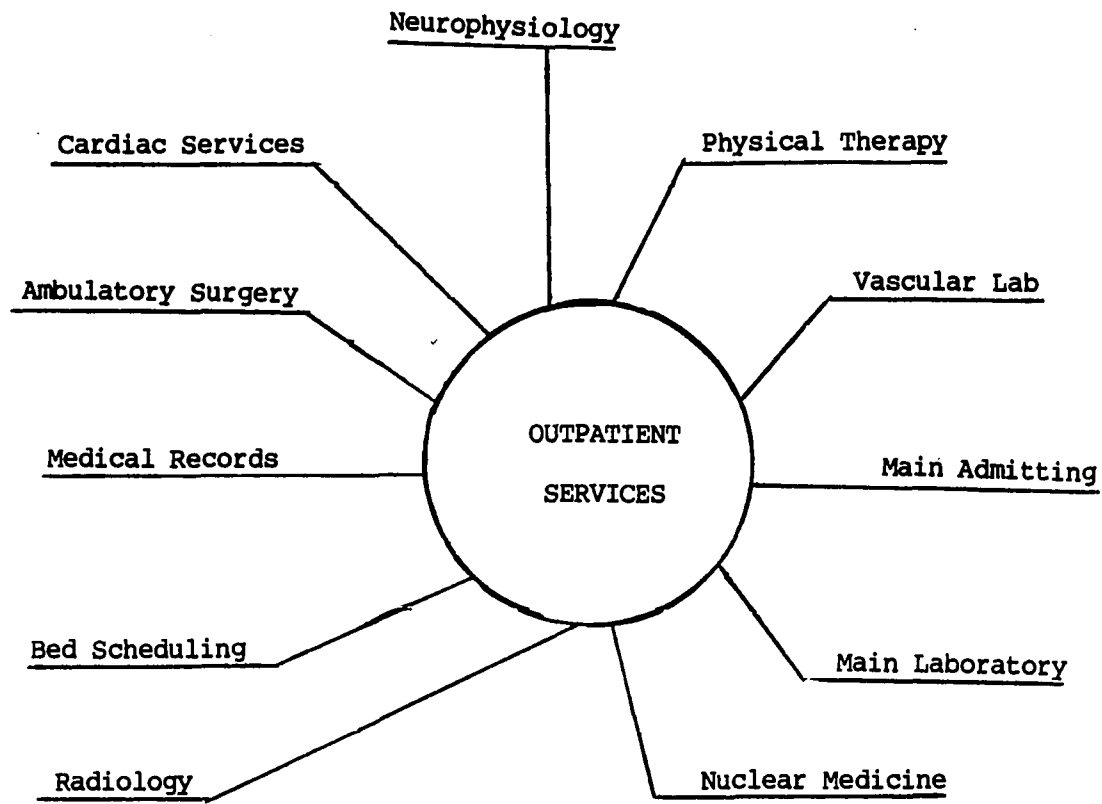


Figure 3.8 Clinics/Facilities Interacting With OSD

and an ambulatory surgery entrance to the east.) In this section, patients arriving for PAT are discussed, then AM-admissions, outpatient treatment, recovery room, and outpatient lab patients are followed as they flow through OSD.

Preadmission Testing

A patient entering for a PAT interview may or may not notice the outpatient services entrance behind the auxilian on the east side of the lobby. If so, the patient goes directly to the OSD receptionist and is attended immediately. If not, the patient might ask the auxilian or the outpatient admitting clerks to direct him toward PAT. As long as the auxilian or admitting clerks understand that the patient is requesting PAT, the patient is directed to the OSD receptionist. Otherwise, the auxilian must look at his list of PAT patients that are expected to arrive that day in order to know that the patient seeks PAT.

Occasionally, the admitting clerks ask the patient to wait in the outpatient lobby until they complete his paperwork, only to discover the patient should have been sent directly to OSD. Usually, before this delay occurs, the PAT nurse realizes the patient is late and goes to the lobby to call for the patient in case he is there waiting. Once the patient is in the PAT office area, he is interviewed in exam room 09 (shown in Figure 3.7). After the interview, the patient is led to the outpatient lab (lab 04 in Figure 3.7). From the lab, the patient is sent to the other ancillary areas if additional tests are needed; otherwise, the patient is sent home.

AM-Admissions

Two classifications of patients arrive at the hospital for surgery via the AM-admit room: those that have been through PAT and those that have not. The patient who has been through PAT knows the location of the AM-admit room and reports directly to the unit 300 clerks on the day of his surgery. This is because PAT patients receive a map of the hospital and instruction on where and when to report for surgery at the time of their interview. Non-PAT patients usually enter the hospital through the main lobby and check with the main admitting clerks to determine where they must report. Occasionally, these non-PAT patients are asked to wait until the clerks research the patient's needs, thus causing the patient to arrive late at the AM-admit room. Once patients have been prepared for surgery in the AM-admit room, they are transported to the main operating room areas. From the operating room area's PAR, they are moved to an inpatient unit where they recuperate.

Outpatient Treatments

Patients arriving for outpatient nursing treatments either go directly to the treatment room or they check with the auxilian to determine where the room is located. Sometimes these patients check in with the outpatient admitting clerks and experience the same occasional delays that PAT patients experience when they report to the outpatient admitting clerks. When the treatment is completed, the patient is sent home.

Recovery Room

Patients arriving at the recovery room come from the PAR or the heart catheter lab. When recovery is stabilized, the patient is transported back to his unit. In addition, outpatients arrive at the recovery room for pre-operative procedures (similar to AM-admits), then are taken to surgery and transported back to the recovery room until they are well enough to be sent home.

Outpatient Laboratory

A patient entering for an outpatient blood draw usually has his paperwork completed by the outpatient admitting clerks. Once the blood draw is performed, the patient is sent home or directed toward the other ancillary units required. PAT patients requiring blood draws are escorted to the outpatient lab by a PAT nurse after the personal interview is conducted. Once again, after the blood draw, the patient is sent home or to the necessary ancillary units.

Areas of Concern

With this understanding of the Outpatient Services Department overall, the issues to be addressed by this study can be outlined. These were either areas that seemed to be overlooked by current procedures, or conclusions that were drawn with no data to back them up. These are also hypotheses upon which the functions of the OSD are based. Following is a list of these areas of concern:

- 1) PAT saves time for the AM-admit nurse and reduces the workload of most medical units prior to surgery.

- 2) Patients would rather make the extra trip to PAT than be treated in an assembly-line fashion in the AM-admit room.
- 3) One centralized room for morning admissions is easier, and more efficient, for the overall hospital staff.
- 4) The AM-admit room should be located close to the main operating rooms for greater efficiency.
- 5) Any delay or confusion about where to report is usually a problem with the patient in communicating which service he is seeking.
- 6) Locating the front office and the outpatient nursing areas close together will increase staff utilization and diminish the impact of demand fluctuations within any one functional area through cross-training and cross-utilization of staff.
- 7) Physicians don't understand the benefits of PAT, or don't know about the services, therefore, marketing and/or promotion of PAT is required.

Other issues brought up during interviews with the OSD staff include: 1) the necessity of a name change because "Outpatient Services" is too general and not indicative of the services provided, 2) the theory of teamwork is excellent, but, in actuality, sharing of the workload only goes one way--there is not as much reciprocity as possible, 3) patients object to the idea of a co-ed room for morning admission, 4) the addition of two chairs or two beds is needed in the outpatient treatment room, 5) all AM-admits should go through PAT, and 7) PAT could serve as a public relations department for TMC since they are the initial point of contact for the patient.

In order to answer the above questions or further analyze these hypotheses, tools had to be developed and implemented so that data could be gathered. A fresh, new perspective could be obtained by researching the manner in which other hospitals dealt with similar issues and by conducting overall observations. In the next chapter, the methodologies utilized in the gathering of the data will be explained. In subsequent chapters, evaluations and recommendations concerning these issues will be discussed.

CHAPTER 4

METHOD OF STUDY

The purpose of this chapter is to delineate the areas in which detailed information was gathered, to present the data collection methods used, and to review the results obtained in these studies. The chapter begins with a presentation of the observations gathered in the AM-admit room and then goes on to outline patient activity in the recovery and treatment rooms. Next, specific elements in the PAT area are evaluated. Finally, a patient opinion survey is presented.

It should be noted here that these data results represent samples to be used for statistical inference. Summers, Peters, and Armstrong (1985) present the objective of statistical inference: "to obtain the best possible information about population characteristics from sample information." When gathering samples, Summers, et al., point out the following property: "it is safe to assume normality of the sampling distribution of the mean of a continuous variable if the sample size exceeds 30, no matter what the population distribution." In all of the studies presented, at least 30 observations were collected in order to ensure the validity of the data for decision-making purposes.

The AM-Admit Room

Available information regarding the functions performed in the Am-admit room was scarce. It was known that patients arrived two and

one-half hours before surgery, during which time the AM-admit nurse could utilize one and one-half hours to attend the patient. The documented average daily patient flow through the AM-admit room was fifteen.

In order to address the areas of concern, further data were required. If PAT did save time for the AM-admit nurse, the savings would be evident in a comparison between the time spent processing a PAT patient versus the time spent processing a non-PAT patient. Also, since the PAT nurses completed a patient history and nursing assessment, the amount of time the AM-admit nurse spent assessing a PAT patient would be less than the time spent with non-PAT patients. Through actual observation of activity in the AM-admit room, two additional areas of concern could be addressed: 1) the AM-admit room should be located near the main operating rooms for greater efficiency, and 2) the single, centralized room is easier for the medical staff.

Methodology

The usual method for gathering timed observations is through the use of a timing sheet and time stamp machine. As described by Edward Rising (1977), the patient carries the timing sheet during the entire visit. This sheet is stamped each time the patient enters a service area, and then is stamped again when the patient exits the same area. The difference between the in and out times indicates the service, or processing time; the difference between an exit and entrance time is interpreted as the wait time.

Although this method is accurate and represents the ideal timed study, its use is not necessary for this study. Due to time and other resource constraints, a modified version of the above approach was utilized. Since the AM-admit room is the relevant area of study, a patient was observed from the time he actually entered the room until the time a transportation staff member took the patient to the main operating room.

Data Elements Collected

This study was conducted by the thesis author over a period of eight weeks of observation. The data elements recorded were varied. First, the status of the patient (PAT vs non-PAT) was documented. Second, nursing assessment times were recorded. These times reflected the number of minutes the AM-admit nurse attended the patient in order to complete admissions paperwork. Times to complete authorization forms and documentation forms were omitted from the assessment because these forms cannot be completed until the patient is ready to enter surgery. Assessment times included only the activities that could be done in PAT. Third, the number of minutes the patient arrived prior to scheduled surgery was recorded. This information would indicate whether two and one-half hours prior to surgery is an accurate measure of the arrival patterns of patients. It would also help to uncover any utilization problems that might result from a patient unnecessarily occupying a bed for several hours. Fourth, the total processing time was computed. This was calculated by adding the time spent by any members of the hospital staff attending the patient. This included patient interaction

(minutes)	Mean	Std Dev	Min - Max
Assessment	11	3.72	6 - 20
Arrival	129	52.38	69 - 284
Wait	62	41.75	4 - 195
Processing	23	14.15	7 - 46
Total	90	43.94	22 - 234

Figure 4.1 Overall Results From AM-Admit Room

with nurses, doctors, phlebotomists, EKG staff, and shaving personnel. It also included trips to the restroom as a result of pre-operative treatments. Fifth, the amount of wait time was computed by summing the number of minutes a patient was left unattended by any hospital personnel. Finally, the total time in the AM-admit room was calculated by adding the wait and processing times. The total time in the system was checked for accuracy by subtracting the entrance time from the exit time.

Overall Data Results

A total of 34 patients were observed, with 26 classified as non-PAT; eight were PAT. As shown in Figure 4.1, the average assessment time was eleven minutes, with a standard deviation of 3.72 minutes. The range of assessment times reflected in the data was between 6 and 20 minutes. The average number of minutes a patient arrived prior to his scheduled surgery was 129, well within the 150 minutes requested. The standard deviation was 52.38 minutes, and the observed arrival range was 69 to 285 minutes. This reveals that a patient could occupy a bed

for almost twice as long as preferred by the hospital. The average wait time was 62 minutes, with a standard deviation of 41.75. The actual range for waiting was between 4 and 195 minutes. The average processing time was 23 minutes, with a standard deviation of 14.15. The number of minutes spent being attended by the medical staff ranged from 7 to 46 minutes. The average time a patient spent in the AM-admit room was 90 minutes, as expected; the standard deviation was 43.94 minutes. The observed range of time spent in the AM-admit room was between 22 and 234 minutes. Overall, 70 percent of the patient's time was spent waiting and 30 percent of the time was spent being attended by the medical staff in preparation for surgery.

PAT versus Non-PAT Results

A comparison between the processing of PAT versus non-PAT patients can be drawn from Figures 4.2 and 4.3. As expected, the average time it takes the AM-admit nurse to assess PAT patients is less than that of non-PAT patients. Of interest are the ranges: PAT patient assessment times fluctuate less than those of non-PAT patients. The average arrival rate of PAT patients is closer to the requested 150 minutes. Here, too, the range oscillates less. The average wait time for PAT patients is higher than that of non-PAT patients. This could have been predicted because all patients are told to arrive 150 minutes prior to surgery. Since PAT patients have already had most of their procedures completed, they spend more time waiting. For this same

(minutes)	Mean	Std Dev	Min - Max
Assessment	9	2.31	6 - 12
Arrival	143	48.28	101 - 247
Wait	81	53.97	54 - 193
Processing	16	9.24	7 - 32
Total	97	49.00	61 - 203

Figure 4.2 PAT Patient Results From AM-Admit Room

(minutes)	Mean	Std Dev	Min - Max
Assessment	13	5.96	6 - 20
Arrival	136	71.07	69 - 284
Wait	61	42.10	4 - 195
Processing	28	14.16	12 - 46
Total	88	47.40	22 - 234

Figure 4.3 Non-PAT Patient Results From AM-Admit Room

reason, processing time for PAT patients is much less than that of non-PAT patients. The average total time in the AM-admit room is slightly higher for PAT patients, but the two ranges are similar.

Conclusions

With this information, several areas of concern may be addressed. The hypothesis that PAT saves time in the assessment and processing of its patients proved to be true. As to the centralization of the AM-admit room, it is more efficient for transportation, the shaving personnel, and the phlebotomists to have the AM-admit room near their respective departments (close to surgery); however, the location of the room has no impact on the efficiency of the AM-admit nurse. The single, centralized room concept does appear to be easier for the overall medical staff, although overcrowding sometimes occurs in the narrow hallway when several patients need transportation at the same time. This is especially true when breakfast trays are being passed to the unit 300 inpatients. An interesting result of the AM-admit room observations is that PAT patients spend 84 percent of their time waiting, as compared with 69 percent for non-PAT patients. In addition, some patients occupy a bed twice as long as they really need to by arriving for their surgery too early.

The Recovery Room

Activity in the recovery room was recorded from nursing care records over a nine day period. Prior to this review, it was documented that the average daily patient flow was 5 to 6 patients, with the first patient arriving at 09:00 and the last patient arriving at 16:00 for a

one hour recovery. Figure 4.4 summarizes the results of the records evaluated.

An analysis was required in order to determine the usual flow through this room. The patients who entered the recovery room prior to outpatient surgery and then returned to the recovery room before being sent home were counted as one patient. That patient's total time in the recovery room was the cumulative total of his admitting and recovery times. Any patients documented as being received as AM-admits were overflow patients from the AM-admit room.

As shown in Figure 4.4, the average time a patient spent in outpatient recovery was 132 minutes. The standard deviation was 105.65, yielding a calculated range of stay from 0 to 449 minutes. The average daily load for the nine observed days was 3.33. Of all the patients entering the recovery room, 57 percent were either outpatients or overflow patients from the AM-admit room. Of the patients discharged, 53 percent were eventually sent home, and the remaining 47 percent were discharged to other facilities or inpatient units within the hospital.

From this evaluation of the recovery room, its proximity to the PAR and surgery areas is only necessary for an expeditious transfer of the patient from PAR to the recovery room. However, this room could be located anywhere in the hospital as long as it takes less than 15 minutes to move the patient, so that vital signs may be taken. In other words, this room could be located near the PAT area. The average stay of a recovery room patient is a little over two hours, but a patient might stay up to 7.5 hours. Therefore, although the daily patient flow

PATIENT NUMBER	DATE	RECEIVED FROM	MINS	TOTAL TIME	DISCHARGED TO
1	6/2	(outpatient)	15		OR
		PAR	20	35	home
2	6/2	(outpatient)	125	125	OR
3	6/3	(AM admit)	65	65	OR
4	6/3	(outpatient)	60		OR
		PAR	265	325	room 711
5	6/3	(AM admit)	15	15	OR
6	6/3	(outpatient)	45		OR
		PAR	45	90	home
7	6/3	(outpatient)	30		OR
		PAR	45	75	home
8	6/3	(outpatient)	60		OR
		PAR	175	235	home
9	6/4	PAR	60	60	room 882
10	6/4	PAR	60	60	room 886
11	6/4	Special procedures	65	65	room 693
12	6/4	PAR	155	155	home
13	6/4	(outpatient)	125	125	OR
14	6/5	OR (surgery cancelled)	120	120	home
15	6/5	PAR	25	25	home
16	6/5	(AM admit)	30	30	OR
17	6/5	(outpatient)	65		OR
		PAR	120	185	home
18	6/6	stretcher	65	65	room 850
19	6/9	PAR	135	135	home
20	6/9	(outpatient)	25		OR
		PAR	140	165	motel
21	6/9	(outpatient)	30		Specials
		Special procedures	285	315	home
22	6/10	Cath lab	60	60	room 750
23	6/10	Physician (plastic)	240	240	home
24	6/11	(outpatient)	81		Cath lab
		Cath lab	80	161	home
25	6/11	(outpatient)	30		X-RAY
		X-RAY	10		OR
		PAR	60	100	home
26	6/11	(outpatient)	55		OR
		PAR	195	250	home
27	6/11	Cath lab	60	60	room 865
28	6/12	Special procedures	75	75	room 533
29	6/12	Special procedures	60	60	room 812
30	6/12	(outpatient)	55		X-RAY
		Cath lab	420	475	home
TOTAL			3951	3951	

Figure 4.4 Recorded Activity in the Outpatient Recovery Room

is low, the length of stay for each patient can be very long. This indicates that the overall utilization of the recovery room is high.

The Treatment Room

Activity in the outpatient treatment room was also recorded from nursing care records over a fourteen working-day period. Prior to this review, it had been documented that the average daily patient flow was between 4 and 5 patients. Figure 4.5 summarizes the results of the records evaluated.

The average time a patient spent in the treatment room was 223 minutes, with a standard deviation of 99.63 minutes. Of the types of treatment given, 27 percent were chemotherapy, 40 percent were transfusions, and 20 percent were amphotericin. Patients receiving treatments are released to go home. The average daily patient flow was 2.14 during the fourteen days.

As indicated by this evaluation, the treatment room could be located near the front office area with little impact on the hospital system. The only change that would be required is the transfer of clerical duties from the unit 300 clerks to the OSD receptionist. Like the recovery room, the daily flow through this room is low, and the length of stay is quite long. According to this data, some slack in the utilization of this room exists to accommodate any overflow of AM-admit patients.

Preadmission Testing

In order to address the areas of concern regarding PAT, more information was required. If patients were confused as to the location

PATIENT NUMBER	TREATMENT	DATE	TIME (in minutes)
1	Chemotherapy	6/1	100
2	Chemotherapy	6/2	150
3	Amphoteracin	6/2	155
4	Chemotherapy	6/2	180
5	Chemotherapy	6/3	210
6	Phlebotomy	6/3	20
7	Transfusion	6/3	305
8	Chemotherapy	6/3	495
9	Transfusion	6/4	210
10	Transfusion	6/5	240
11	Transfusion	6/5	195
12	Transfusion	6/6	305
13	Transfusion	6/9	345
14	Phlebotomy	6/10	25
15	Chemotherapy	6/11	345
16	Amphoteracin	6/11	270
17	Transfusion	6/11	260
18	Transfusion	6/11	195
19	Transfusion	6/12	140
20	Transfusion	6/13	225
21	Amphoteracin	6/13	310
22	Transfusion	6/13	270
23	Amphoteracin	6/16	255
24	Amphoteracin	6/16	150
25	Platelet	6/18	145
26	Transfusion	6/18	181
27	Chemotherapy	6/18	215
28	Amphoteracin	6/18	210
29	Chemotherapy	6/18	385
30	RBC's	6/19	210
TOTAL			6701
AVERAGE:		223.37 minutes	
STD. DEVIATION:		99.63 minutes	

Figure 4.5 Recorded Activity in the Outpatient Treatment Room

of PAT, a consistent pattern of tardiness would be evident. Also, before PAT can promote their services, they must determine the source of their current demand so that, when combined with knowledge of the potential market, they know where to concentrate their marketing efforts. Finally, in an effort to reduce the workload of the PAT nurses, the clarity of physician's orders must be reviewed.

Methodology

The most common method of monitoring personnel activities in operations management is to have employees write down each task they perform throughout the day. In addition, they write down the time of day they started the task, and the time they finished the task. Not surprisingly, employees have almost no slack time when this method is used. The reason is due to the reliability of the source; even if a staff member makes a lengthy phone call, he will not document the call on the activity log because he knows it is not to his advantage to do so. Therefore, this methodology was not utilized for this study.

Instead, a task tally sheet was developed. Figure 4.6 illustrates the tally sheet developed, as well as the final results gathered. Of all the tasks performed by PAT, four were identified as indicators for addressing the area of concern. These four tasks were then divided into relevant categories. The PAT staff was instructed to tally the relevant activities for a 24 day period. As they performed their daily functions, one tally was recorded each time a specific event occurred. For example, if a physician notified PAT that a patient would arrive at 10:00 the next morning, when that

patient arrived at 10:10 the PAT nurse would mark one tally for 6-10 minutes late and one tally for an in-person interview conducted (PAT notified by physician's office).

Data Elements Collected

In order to understand the purpose of the tally sheet, the objectives behind each question must be discussed. Question #1 was developed to determine the number of patients that arrived late for their PAT appointment as well as the number of actual minutes they were late. Prior to this study, no information was available as to the tardiness of patients. As mentioned earlier, consistent lateness may indicate confusion over where to report for PAT. Along with the patient opinion survey, discussed in the next section, tardiness may justify further investigation into the accessibility of PAT. Of course, tardiness impacts scheduling procedures as well. Question #2 was developed to determine the main source of PAT patients. Operating room slips have a box marked PAT that can be checked either yes or no. PAT receives copies of all operating room slips and sorts through them to see which are marked "yes". Any remaining AM-admits or outpatients are reviewed to determine if PAT can be done. This is done by calling physicians and explaining PAT benefits and procedures. Patients covered under health maintenance organizations (HMO's) rarely go through PAT since they have all pre-operative testing performed in the HMO facility. TMC policy states that all surgical procedures must be preceded by an in-house blood draw; therefore, HMO patients require admissions paperwork, prepping, and blood draw prior to surgery. When asked if the

TASK	TALLY (✓)	
1. Patient arrived late for interview: (indicate number of minutes)	0-5 min:	1
	6-10 min:	7
	11-15 min:	3
	16-20 min:	1
	21-25 min:	0
	26-30 min:	2
	31-35 min:	0
	over 35 min:	4
2a. Conducted patient interview: (PAT notified by physician's office)	over phone	in person
	76	92
2b. (PAT notified via operating room slip)	40	5
2c. (PAT called physician to get interview)	11	2
2d. (Patient walked in for PAT interview)	PAT to doc	doc to PAT
	14	13
3. Call to physician to determine if PAT is needed:	32	
4a. Call to physician to clarify orders: (Because no orders on OR slip)	PAT patient	OTHER patient
	37	6
4b. (Because orders on OR slip are unclear)	2	1
4c. (For some other reason)	12	12

Figure 4.6 Results from PAT Task Tally Sheet

patient requires PAT, the physician may specify that this is an HMO patient, simply reject PAT services, or agree to have the patient participate in PAT. Question #3, therefore, was chosen to determine the number of these calls made to physicians. When combined with question #2c, the success rate of these phone calls can be determined. The solicitation of PAT services to physicians is a form of marketing, and this question may indicate how much of that marketing is being done. As long as PAT is planning to promote their services, they could also encourage cooperation with physicians and reduce their own work load at the same time. Question #4 was chosen because physician's orders are critical to the success of PAT. Unless all procedures are specified in detail, PAT cannot prepare the patient as completely as possible prior to surgery.

Data Results

Before the data results are discussed, it should be noted that the accuracy of the data depends on the reliability of the PAT staff in completing the tally sheet. A discrepancy appears to exist in the data gathered for question #2. It was expected that PAT would be notified of a patient in a similar manner for both telephone registration and in-person interviews. However, the data results show the proportions to be quite different. At the time of the study, the RN who usually does in-person interviews was on vacation. When the RN who replaced her was asked if she actually separated the patients interviewed according to the source category, she replied, "I really can't remember, but I think I did." Since most patients interviewed on the telephone come in for an

in-person interview and vice versa, the proportions for the telephone registration were determined to be the most representative of the source of PAT patients.

From Figure 4.6, it can be determined that 18 percent of the PAT patients studied were late for their appointment. Most of these patients were ten minutes later. Of the telephone registrations conducted, 60 percent had been requested by the physician's office, 31 percent had been documented on the operating room slips, while 9 percent were solicited by the PAT team. Of the calls made to physicians, 34 percent were successful in obtaining PAT appointments. A total of 51 calls were made to physicians in order to clarify orders--73 percent of these calls were required because no orders were specified on the operating room slips.

Conclusions

Patients are often called several days before they come in for PAT. Therefore, some of the patients called during this study period had not been interviewed in person. Also, some of the in-person interviews were being conducted and tallied while the preceding telephone registrations were not. Assuming that these time lags balance each other out, the following conclusions can be made.

No consistent pattern of tardiness was found in the data, therefore patients must be having no trouble locating PAT. The main source of PAT patients is directly through the physician. Therefore, marketing efforts should be aimed at the physicians not currently participating in PAT, but having a relatively large number of AM-

admits or outpatients. Calls to the physician to solicit PAT services are successful enough to encourage the continuance of this practice. The number of orders unclear or unspecified are sufficient to justify a campaign that encourages physician accuracy, thoroughness, and participation in the PAT program.

Patient Opinion Survey

Throughout the literature, evaluations of ambulatory care include patient opinion surveys as a reflection of the effectiveness of the services provided. In the OSD, patient opinion was informally gathered by the RNs during patient interviews; no formal feedback method existed. Therefore, a patient opinion survey was developed and conducted.

Paula Stamps (1977) points out three different types of patient satisfaction surveys: informal, slightly formal, and the fairly sophisticated methods. The type of questionnaire used depends upon the reason for gathering patients' opinions. The informal method utilizes a few, broad, open-ended questions, ie, "How satisfied are you with your care?". This method is used to elicit superficial responses. The typical answer might include atmosphere, physicians, nurses, wait time, or no comment. the drawback to an informal survey is that it is difficult to get negative responses from patients. Also, the categorization of answers is often subjective. As Stamps points out: "Especially difficult is defending the definition of the categories."

The slightly formal measurement of patient satisfaction included a mixture of general and specific questions, ie, "What do you think a good family doctor is? Does your family have a family doctor?". This

method provides insight into patient attitudes and the success of the service. However, it is often lengthy and the responses are more difficult to weight and categorize than the informal method.

The fairly sophisticated survey of patient opinion asks direct questions which elicit specific responses, ie, "The nursing staff was very competent". A scale is often used to quantify the response, ie, "strongly agree", "agree", "disagree", "strongly disagree". This method is easy to measure and captures patient attitudes with significant accuracy. However, the development of this survey type is a lengthy process. The same questions must be asked in different ways to ensure the accuracy of the response and then the survey itself must be tested for reliability.

Methodology

Since the OSD was interested in broad opinions that would highlight areas that could be reviewed in greater detail, an informal patient opinion survey was chosen. The Critical Incident Technique (CIT), developed by John C. Flanagan in 1949, was utilized. As outlined by Richard I. Henderson (1979), CIT helps to identify and define critical elements. This method was originally designed to improve the quality of employee performance appraisals, but has since been applied in various areas. This technique strives to identify specific behaviors that are either highly satisfactory or highly unsatisfactory. In order to maintain the quality of the CIT, three areas must be addressed: the background or context; the actual, observable behavior, and the reason the behavior is important.

Appendix A shows the actual survey developed using CIT. Each question, along with patients' response, is shown in Figures 4.7 through 4.15. It should be noted here that the introductory material used in the survey was taken from an actual survey developed by TMC which screened the quality of inpatient care. This was done to follow hospital policy regulating the interviewing of patients. Also, two questions were added to the CIT survey as requested by TMC administrators.

The survey was administered over the telephone to 51 patients, all of whom had attended preadmission testing prior to being admitted for surgery. The survey was limited to these patients to accommodate question #7; it would be unreasonable to ask a patient if they preferred preadmission testing when the patient had never heard of or experienced that service. Pediatrics patients were omitted from the survey since they do not use the AM-admit room. For the same reason, plastic surgery patients were also omitted.

In order to minimize the amount of bias entering into the survey, 26 respondents were asked questions 1, 2, and 3 first (the questions related to a positive experience), and 25 respondents were asked questions 4, 5, and 6 first (the questions regarding a negative incident). It was often difficult to get a respondent to describe an event or particular behavior without lending bias to his opinion. When the patient being surveyed offered very little feedback, and did not respond to a slightly probing question, a pause, or repetition of the question, the surveyor continued with the next question. This was

Can you recall an incident that gave you an especially good feeling while you were in the admitting, preadmission testing, or unit 300 areas?
(N=51)

<u>Response</u>	<u>n</u>	<u>%</u>
1. Attitude of staff	31	60.78
Pleasant disposition	19	
Exemplary behavior	3	
Made patient comfortable	9	
2. Patient education	8	15.69
Informative	3	
Answered questions	5	
3. Efficient/good service	9	17.65
4. Convenience of AM-admission	1	1.96
5. Excellent surgery prepping staff	1	1.96
6. Painless outpatient blood draw	1	1.96

Figure 4.7 Results from Question 1 of Survey

Was there anything in particular that made you feel this way?
(N=51)

<u>Response</u>	<u>n</u>	<u>%</u>
1. PAT staff behavior	32	62.75
Polite/nice/helpful/caring	10	
Informative	8	
Smiled often	5	
Exemplary behavior	7	
Interested in patient	2	
2. General atmosphere	4	7.84
3. Helpful auxilian	1	1.96
4. Painless outpatient blood draw	1	1.96
5. No comment	13	25.49

Figure 4.8 Results from Question 2 of Survey

Could you tell me, briefly, why this is important to you?
(N=51)

<u>Response</u>	<u>n</u>	<u>%</u>
1. Nervous about surgery	16	31.37
2. Calmed patient/feeling of security	14	27.45
3. Prefer individual care	10	19.61
4. Desire curteous service	2	3.92
5. Previous bad experience	2	3.92
6. No comment	7	13.73

Figure 4.9 Results from Question 3 of Survey

Can you recall an incident that gave you an especially bad feeling while you were in the admitting, preadmission testing, or unit 300 areas?

(N=51)

<u>Response</u>	<u>n</u>	<u>%</u>
1. Uncomfortable with co-ed	3	5.88
2. Long wait in PAT	2	3.92
3. Long wait before surgery	2	3.92
4. Aesthetics in AM-admit room	1	1.96
5. No phone in AM-admit room	1	1.96
6. Getting on stretcher in hall	1	1.96
7. Repetition of PAT questions in AM-admit	1	1.96
8. No comment	40	78.44

Figure 4.10 Results from Question 4 of Survey

Was there anything in particular that made you feel this way?

(N=51)

<u>Response</u>	<u>n</u>	<u>%</u>
1. Uncomfortable with co-ed AM-admit room	3	5.88
Felt embarrassed	1	
Frequent use of restroom needed	2	
2. Drab appearance of unit 300/dim lights	2	3.92
3. Assembly-line type atmosphere	1	1.96
4. Nurses were searching for lab results	1	1.96
5. No comment	44	86.28

Figure 4.11 Results from Question 5 of Survey

Could you tell me, briefly, why this was important to you?
(N=51)

<u>Response</u>	<u>n</u>	<u>%</u>
1. Prefer to be informed	4	7.84
2. Aesthetics in AM-admit room	3	5.88
So subdued it affects emotional state	2	
Cheery atmosphere makes you feel better	1	
3. Felt exposed in co-ed room	2	3.92
4. Wait caused tardiness in return to work	1	1.96
5. Last-minute phone call required	1	1.96
6. No comment	40	78.44

Figure 4.12 Results from Question 6 of Survey

If you were to be admitted again, would you rather have your admissions tests and paperwork done just before surgery or would you rather stop by a day or two before surgery for your preadmission testing?
(N=51)

<u>Response</u>	<u>n</u>	<u>%</u>
1. Preadmission testing	37	72.55
Reduced stress at time of surgery	6	
Reduced assembly-line type care	5	
Identified warning signs for surgery	1	
No further comment	25	
2. At time of surgery	13	25.49
Long wait prior to surgery	5	
Avoid two trips to hospital	3	
Live outside of Tucson	2	
Easier for childcare	1	
No further comment	2	
3. No preference	1	1.96

Figure 4.13 Results from Question 7 of Survey

How do you think that the Outpatient Services Department could improve its service?

(N=51)

<u>Response</u>	<u>n</u>	<u>%</u>
1. Improve appearance of AM-admit room	2	3.92
2. Let other units know where PAT is located	2	3.92
3. Create office area for outpatient nursing instead of nurse's station	2	3.92
4. Never do pre-op procedure in hallway	1	1.96
5. Tour of surgery procedures during PAT	1	1.96
6. Separate men and women in AM-admit room	1	1.96
7. Have hours on Saturday	1	1.96
8. Advise patient when PAT/blood draw is done	1	1.96
9. No comment	40	78.44

Figure 4.14 Results from Question 8 of Survey

Is there any other incident you can think of that you feel is important that I could write down?

(N=51)

<u>Response</u>	<u>n</u>	<u>%</u>
1. Impressed with meeting anesthesiologist	3	5.88
2. Didn't get requested private room	1	1.96
3. Redesign wing with pastel colors	1	1.96
4. Parking lot is always full	1	1.96
5. Enjoyed having visitors in AM-admit	1	1.96
6. Should have booties in Am-admit (cold air)	1	1.96
7. No comment	43	84.32

Figure 4.15 Results from Question 9 of Survey

done to avoid lingering on any particular question and to reduce the possibility of influencing the patient's response.

Data Results

The results of the survey are shown in Figures 4.7 through 4.15. Patients responded favorably to the attitude of the OSD staff. The category of pleasant disposition included comments such as "the nurses were nice," and "they smiled a lot". The exemplary behavior category included the helpful "extras" performed by the staff-- tasks which are not found in a job description, but which constitute outstanding job performance in the particular situation. For example, an RN lent her umbrella to a patient so the patient could walk to the car during a sudden downpour. One patient remembered an RN sharing her lunch with the patient's child. The documentation of food preferences and the provision of beverages for patient guests was also included in this category. The patient education category reflects the number of patients who appreciated a greater understanding of their surgery and/or hospital procedures. Some patients responded that the service was "efficient" or "good", without offering further details. Rather than make assumptions about what the patients were trying to express, the efficient/good category was created. The remaining categories represent the feeling expressed by the patients. The no comment category included responses such as "nothing" or "no, not really". Responses having to do with inpatient or ancillary units were included under no comment because the OSD does not have

control over these areas; the responses were irrelevant for this study. Certain personal preferences, such as a resentment for being weighed, were also included in the no comment category; OSD cannot change hospital policy to accommodate certain personal preferences.

Conclusions

Conflicting views between PAT and physicians over whether or not patients prefer to make an extra trip to the hospital for preadmissions testing can be resolved by referencing Figure 4.13. Of the patients surveyed, 73 percent prefer PAT. Of the 25 percent who prefer to have pre-operative procedures done in the AM-admit room, most complained of the long wait prior to surgery with nothing to do. Therefore, the survey supports the opinion that patients prefer PAT, with the main drawback being the ensuing long wait while in the AM-admit room.

The question about delay or confusion as to where PAT is located can also be addressed. Of the patients surveyed, 4 percent advised the OSD to let other facilities know of its existence and location; 2 percent complained of a long wait at preadmission. Therefore, this survey supports the hypothesis that patient delay due to confusion over the hospital layout is avoided most of the time; if the TMC staff understands where a patient should be, they direct him to the proper location. In fact, one patient complimented the staff in their detective abilities--the hospital staff displayed great persistence in their search for where the patient was supposed to report.

Finally, the theory that patients object to the idea of one room to treat both sexes was supported here. Although only 5.88 percent of the patients mentioned having an uncomfortable feeling when pre-operative procedures were performed in a co-ed room, this number is fairly significant when consideration is given to the fact that this survey method rarely elicits a negative response.

CHAPTER 5

EVALUATION

The purpose of this chapter is to challenge the procedures currently used in the Outpatient Services Department (OSD). Specific questions are raised and answers are given both for and against current procedures. Questions are asked in order to gain more insight into areas of concern and to provide the foundation for the recommendations presented in chapter six. In chapter six, they will be brought together to provide an overall perspective.

Justification of OSD Services

The following section analyzes specific areas in the OSD and provides support for the issues in question. The benefits of preadmission testing are discussed, and the designation of PAT and AM-admissions as an outpatient service is justified.

Preadmission Testing

One of the first questions to ask about PAT is: Why have a preadmission testing service? In order to answer this question, the benefits and drawbacks of preadmission testing can be discussed. Blanchet and Switlik (1985) point out one of the greatest advantages: "Hospitals that have a preadmission testing program have proven that the patient's length of stay can be shortened at least from one to two days." The benefits of PAT affect the patient as well.

From the patient's perspective, a greater understanding of surgery can be obtained through the use of media such as video cassettes. Bed scheduling requests are addressed as well as questions about hospital layout. Often, a meeting with an anesthesiologist is arranged to dispel any fears of anesthesia. With the reduction in chaos and wait-time before surgery, the patient is satisfied with the morning admission process. Another benefit of PAT is that the patient is less likely to be late on the day of surgery since he knows exactly where and when to report. PAT can also save the patient unnecessary hospitalization and money since test results are known prior to the surgery date.

The hospital benefits from both a relaxed patient and a productive staff. A more complete medical history can be obtained since the patient satisfaction survey revealed that a patient's recall is better during PAT than it is just prior to surgery. Admissions are expedited when the AM-admit nurse has a complete medical history and nursing care plan. The main laboratory doesn't have to process as many immediate requests for blood draw results, and fewer phlebotomists must be sent to the AM-admit room. The AM-admit nurse doesn't have to wait while patients provide urine samples or while other medical units complete their tests.

With the help of physicians, any problems with surgery can be identified early. If rescheduling or cancellation is necessary, it is done before the patient has started the admitting process. Perhaps that time could be filled with another surgical procedure, thus allowing

greater utilization of the main operating rooms. Better care can be provided when the exact condition of the patient is known in advance. Since physicians give their orders to the PAT staff, they save the time required to call the various ancillary units in order to schedule the patient's tests.

Of course, PAT does have disadvantages. The greatest disadvantage is the patient's inconvenience of making two trips to the hospital. Another problem is that many physicians don't know PAT service is available or simply choose not to utilize it. HMOs prefer to exclude their patients from participation in PAT, since they perform lab tests and X-rays in their own facilities prior to a patient's surgery. Blood draws are not included in these tests because TMC policy specifies that blood draws for surgeries performed in the hospital must be done by the hospital. Although the HMOs do their own testing, PAT could complete the necessary paperwork and perform blood draws on HMO patients prior to surgery. Another drawback to PAT, as it is currently functioning at TMC, is that the amount of time the patient spends idly waiting for surgery is greater than the time spent by non-PAT patients.

PAT as an Outpatient Service

With this understanding of PAT, the next question can be asked: Why is PAT organizationally a member of the Outpatient Services Department? When TMC created PAT, the justification was that patients are seen on an outpatient basis, prior to entering the hospital for surgery, and therefore it is an outpatient function. Perhaps the best

way to evaluate this reasoning is to review other hospitals to see where they place PAT in the organizational hierarchy.

The Albert Einstein College of Medicine has a Screening Clinic within its Ambulatory Care Division. The screening clinic "serves as an access route to all other clinics in the hospital; patients who otherwise would be crowding up the Emergency Room are seen in the clinic, and many routine tasks, such as the reviewing of test results, are performed by the nursing staff. Preadmission testing is now performed in the Screening Clinic." (U.S. Department of Health, Education, and Welfare 1974) This hospital agrees that PAT is an outpatient service.

The U.S. Health Resources Administration (1977) described its preferred preadmission procedures:

An intake evaluation screening clinic will constitute the initial port of entry to diagnostic and treatment services for self-referred outpatients, those referred by physicians, or those referred by recognized public health agencies. A general clinical appraisal will be made and a medical history initiated before channeling the patient to constituent specialty clinics or services.

From this description, and the use of the words "port of entry" and "outpatient", it can be surmised that the described clinic would be a part of outpatient services.

Therefore, the preference of the Health Resources Administration and the example of the Albert Einstein Clinic have supported the reasoning used by TMC. Contradictory examples could not be found in the literature. In fact, examples are difficult to find since preadmission testing is a relatively new concept in hospitals. In their recently released book, Blanchet and Switlik (1985) recommend that hospitals

develop preadmission testing programs in order to improve the admissions process. All of the above supports the concept that PAT is a viable, productive department, especially within the relatively new environment of reimbursement based on the type of illness instead of hospital cost. PAT allows for better utilization of the hospital operating rooms because early test results identify possible surgery cancellations and it helps reduce overall hospital costs by reducing the workload of the medical staff on the day of surgery.

Time Spent To
Perform PAT Services

From the data collection, the average PAT interview was 23 minutes long; in the AM-admit room, the average assessment time for PAT patients was 9 minutes while it was 13 minutes for non-PAT patients. Therefore, the following question might be asked: Why should hospitals spend extra time with PAT in order to save time for the AM-admit nurse? By looking only at these numbers, the conclusion might be drawn that PAT requires twice as much time to assess patients and, therefore, must be inefficient. The fallacy with this argument is the idea that PAT is established solely to save nursing assessment time. In fact, PAT serves other functions, both quantifiable and non-quantifiable, that benefit the hospital overall. The benefits of PAT have already been discussed; the point of this discussion is that statistics and efficiency figures have their limitations. They can only take into account certain effects of each operation and they can't look at all operations at the same

time; the evaluator must piece these numbers into a representation of the entire system before conclusions can be drawn.

AM-Admissions AS
An Outpatient Service

A preliminary question when evaluating the OSD is: Why is the AM-admit room a part of OSD? From TMC's point of view, this room was probably assigned to OSD for lack of a better department. The room is set aside to treat inpatients, but only for a short period of time. Therefore, it could not be combined with an inpatient floor unit. Since hospitals are encouraging PAT prior to surgery, the coordination of scheduling and charting is better controlled with PAT and the AM-admit room a part of the same department.

An alternative method would be to place the AM-admit room under the control of the main operating division. The logic for this move is that all patients using the AM-admit room will also enter one of the operating rooms. However, the AM-admit room requires a standard nursing function, not a specialized surgical staff function. Employing this alternative, communication between the OSD and the main operating room division might be restricted. The interfacing of PAT and AM-admissions procedures could be hampered. Therefore, this alternative is not as acceptable as having the AM-admit room organizationally a member of the Outpatient Services Department.

Critical Review of OSD Services

In this section, PAT procedures, scheduling methods, staff hours, AM-admit procedures, and the AM-admit facility itself are evaluated.

Questions are raised, examples are presented, and alternative methods are suggested. In chapter six, these issues will be brought into an overall perspective.

Scheduling Methods

At this point, detailed questions about the manner in which PAT provides its services at TMC can be addressed. Currently, the two nurses scheduling interviews keep a log on their own calendars. All appointments scheduled during the day are transferred to the interviewing RN's calendar. Therefore, it is the interviewing RN who has a complete list of appointments; the nurses actually scheduling don't have complete appointment books. Therefore, the following question can be asked: Why isn't the scheduling of PAT appointments centralized? In order to evaluate this method, others must be reviewed.

Stimson and Stimson (1972) describe a large, lazy-susan-style turntable upon which the appointment book is placed. This turntable is located centrally so that all personnel have access to it. Each staff member simply rotates the turntable whenever the appointment log is needed. This method is simple, convenient, and provides a means for centralized scheduling. However, it is impractical in its application at TMC. Each of the nurses has her own office; even if a "window" were cut into the wall and the turntable were placed in the window, the privacy of the patient would be invaded. Conversations in any one office might be heard by another office. This could interfere with the confidential, one-to-one care that PAT provides a patient.

An alternative method is through the use of an automated scheduling program. If each of the nurses had a terminal at her desk, she could call a computerized log book up on her screen. As long as the log book is updated each time an appointment is scheduled (using on-line, real-time updating), the nurse would be assured that the appointments on her screen reflect the most recent updates to the calendar. This method might require two personal computers networked to a larger personal computer, e.g., an IBM AT. This purchase would involve a capital investment of approximately \$10,000, as well as time to implement, but the computers could have other uses too. Perhaps a systems analyst should investigate the possibility of adding OSD to the main computer network and allowing them to access a common database.

The method presently used by the PAT staff appears to be adequate, considering the current staff size and patient load. Physicians might be frustrated from having to wait for the receptionist to find a scheduling nurse when an appointment is to be requested, but this can be relieved by giving the direct phone number of the scheduling nurse to physicians. No mention was made by either patients or the PAT staff of problems with the appointment system. This is because the current staff compensates for overscheduling since all three nurses can conduct in-person interviews and complete nursing care plans. Also, the staff communicates frequently with each other to clarify schedules or accommodate patients. However, if staff attitudes change or the patient load increases, this system may prove to be inadequate.

PAT Performing the Admitting Function

Another question that might be asked is: Why does PAT perform the admitting function? Currently, PAT fills out all admissions paperwork for its patients--including the assignment of account numbers. Main admitting does all the inpatient paperwork, and outpatient admitting does all the outpatient paperwork. PAT does its own admitting because it is an intermediary department. Since PAT patients are both, PAT has been doing admissions.

Blanchet and Switlik (1985) describe an alternative method for handling preadmissions. They describe one centralized admissions desk in which all paperwork is completed. A prescheduling section is designated in this admitting area; the clerks in this section are responsible for taking reservations and making appointments with ancillary departments in which tests are performed. Only one member of this staff is a nurse: the admitting orders nurse. She calls physicians to clarify or confirm necessary orders and then shares this information with the other clerks. When the orders are taken and the testing appointments scheduled, the admitting clerks call the patient to complete admissions paperwork and advise the patient of his appointments. At the time of the PAT interview, the patient checks in with the prescheduling section of admitting and is then taken to the PAT area. Here, the nursing care plans are completed, blood draws are taken, urine samples are collected, and patient education is conducted. Once the PAT process is complete, the patient continues to any other ancillary areas he is scheduled to visit. At the time of surgery, the

patient reports to the same admissions desk, where his completed paperwork awaits him.

This method offers one significant advantage over the process used by TMC: the expertise of nurses is utilized for taking orders and completing nursing care plans instead of clerical duties. The PAT nurses perform several clerical function at TMC. Although these additional tasks provide job enlargement by giving the nurses a variety of responsibilities, their technical skills are not utilized to the greatest extent.

Other factors may have entered into TMC's decision to have PAT perform admitting. Since admissions is under the control of a division completely separate from the OSD, problems with interaction may exist. Effective performance of PAT relies heavily upon prompt processing of PAT requests and proper spacing of in-person interviews. When the control of these two functions is transferred to another division, PAT's effectiveness becomes dependent upon the efficient performance of the admitting function.

Handling of OR Slips

Another question regarding the current PAT process can be asked: Why are all OR slips sent to PAT for review? The main operating rooms employ a single person to schedule the main operating rooms. This person must maintain schedules for all ten operating rooms and balance emergency requirements as well. It is easy for him to simply separate the yellow copy and place it in a stack to be picked up by PAT at the

end of the day. The PAT nurses then sort through the slips to identify their patients.

An alternative method would have the operating room scheduler place only AM-admits and outpatients in the stack to be picked up by PAT. This would not require any additional time because he had just taken the call and completed all information. It would, however, save time for the PAT nurses since they would not have to sort through inpatient slips in order to review outpatient and AM-admit patient requests. In addition, it would still provide the opportunity to market services to physicians who don't request PAT since the staff receives slips for all possible PAT patients.

Time Spent Clarifying Physician's Orders

Following the above question, one might ask: why must PAT nurses spend so much time clarifying or taking physician's orders? Hospital policy restricts admitting clerks from taking doctors' orders. Also, the operating room scheduler is not authorized to take physician's orders; however, it would be helpful to PAT if he were. PAT nurses spent a significant amount of time trying to get in contact with physicians so that orders can be taken or clarified. Since theirs is not an emergency request, physicians may wait until the end of the day to return telephone calls. In the case of the physician calling to schedule PAT, orders are usually taken at that time. Patients sent directly to PAT by physicians should have the necessary orders with them. Writing an order clearly and completely won't add too much to a physician's time while it will save PAT a significant amount of time and

effort. Another reason this problem exists may be that physician's receptionists are scheduling surgery and they cannot or do not relay the doctor's orders to the scheduler. Whatever the reasons, if this two-step process could be reduced to a one-step process, it would be much more efficient for OSD.

PAT Staff Hours

Currently, PAT patients begin arriving at 08:00 for their scheduled interview. The interviewing nurse comes in at 05:30 and prepares patient charts and collects paperwork from the necessary units in anticipation of the upcoming patient load at 08:00. Since the scheduling nurses prefer to have the interviewing nurse perform patient interviews, the majority of patient interviews are scheduled between 08:00 and 15:00. The scheduling nurses do accommodate any later appointments, which provides them with diversity in their tasks too, but the incentive to schedule appointments after 15:00 is greatly reduced. Therefore, the following question arises: Why are the hours of the interviewing nurse from 05:30 to 15:00?

Hospitals magazine published an article (March 16, 1985) which stated that PAT "hours of operation should include those hours before and after the typical working day, noontime, and weekends, for the convenience of working patients." Since it may be more convenient for working patients to attend PAT after work instead of at 08:00, further research is required to determine if the PAT office should be open until 19:00 or 20:00. In the meantime, the interviewing RN should be available until 17:30. One of the other nurses, or a clerk, could

perform the preliminary charting and test results collection. With this method, the scheduling nurses would only have to cover for the interviewing nurse from 08:00 to 09:00 and the convenience of PAT for working patients would be increased.

Surgery Arrival Times

The final question that arises concerning the PAT process is: Why are PAT patients requested to arrive two and one-half hours prior to surgery? Of course, the AM-admit nurse requires some slack time during which a patient should be available because she often must attend several patients within a short period of time. However, the amount of wait time for PAT patients can be reduced while still providing ample slack time for the medical staff.

The average processing time required by a PAT patient is approximately 15 minutes, compared to approximately 30 minutes for a non-PAT patient. Excluding the hour required by the main operating rooms for anesthesia preparation, 90 minutes is the required availability time for non-PAT patients. This includes 30 minutes processing time and 60 minutes slack time. (The 60 minutes is also used by ancillary units to perform pre-operative procedures.) Using the same proportion of processing time to total availability time yields 45 minutes in which PAT patients should be available to the medical staff-- 15 minutes processing time and 30 minutes slack time. Under the assumption that the proportion of processing time to total availability time is the same for both PAT and non-PAT patients, it is reasonable to request that PAT patients arrive one hour and 45 minutes prior to their

scheduled surgery. This reduces the wait time for PAT patients and still provides plenty of slack time for the medical staff to complete any last-minute pre-operative procedures.

Patients Utilizing The AM-Admit Room

Another question that might be asked is: Why aren't all morning admissions patients admitted via the AM-admit room? In the past, when an overnight stay was standard admission procedure, patients were kept in the same unit with the same nurse so that an atmosphere conducive to a favorable nurse/patient relationship could be established. While this was an effective concept, with the advent of AM-admissions it became impossible.

The nursing staff believes that this relationship is important, but they must realize that it can now be established only during the recovery period; not enough time is available to establish rapport with an AM-admissions patient prior to his surgery. The unit 300 nursing staff has held onto the nurse/patient relationship concept and uses this as a reason for admitting their patients into the same room they will eventually recover in. The irony of the situation is that the AM-admit nurse performs the admitting and pre-operative procedures for these unit 300 patients; the patient actually interacts with two nurses, the AM-admit nurse and the unit 300 nurse. Therefore, it is not clear that the opportunity exists for this relationship to be established.

Although the above scenario helps provide beds for any overflow that might occur in the AM-admit room, it creates more work for the

AM-admit nurse since she must run to the other rooms in order to attend the unit 300 AM-admit patients. Since the AM-admit facility itself is actually borrowed from unit 300, the AM-admit nurse views the admission of unit 300 patients to their respective rooms as a courtesy. However, it can be very hectic administering care when several patients are scattered throughout the unit.

The centralization of all AM-admission patients in one area would be more efficient for the AM-admit nurse. This includes outpatients admitted in the recovery room. The standard might be: if the AM-admit nurse is responsible for admitting the patient and performing pre-operative procedures, that patient should enter surgery via the AM-admit room. If this standard is used, acceptable alternatives must be developed to accommodate overflow situations.

The Location of the AM-Admit Room

An issue directly related to the relocation decision is: Why must the AM-admit room be located near surgery? As discussed earlier, the location of the AM-admit room close to surgery is most efficient for patient transportation. If the AM-admit room were located near the front office area, patients would have to be transported through a long hall to surgery. Also, ambulatory patients visiting the outpatient clinics would be sharing the halls with patients being transported to surgery on stretchers. However, if a transportation route away from the main flow of outpatients were used, this problem would be minimized.

If the AM-admit room were located near the front office area, other ancillary functions could be easily accommodated. The outpatient

phlebotomist might perform blood draws on non-PAT patients and send the specimens through the vacuum tube for analysis. Cardiology is closer to the outpatient front office area than to the surgery area, thus EKG's could be facilitated. Radiology is located between the front office area and the surgery area, facilitating X-rays. Therefore, other than patient routing problems, the AM-admit room could be located near the front office area.

The AM-Admit Facility Itself

In a review of the facilities and aesthetics of the AM-admit room, one might ask: Why must the AM-admit room look like an inpatient care hospital room? A subdued, sterile atmosphere prepares the patient for surgery. However, a dull room only adds to the concept of a factory-like area. As the patient survey revealed, a cheerful ambiance can be created with pastel colors. This would serve the twofold purpose of calming the patient and minimizing the illusion of assembly-line care.

Another question about the AM-admit room facility is: why does it have only one restroom available to patients? When pre-operative procedures include the collection of urine samples or the administering of enemas or douches, adequate restroom facilities are a necessity. The use of these facilities is greater during pre-operative procedures than during inpatient recovery. Since the current AM-admit area is a typical four-bed inpatient care room with one restroom, the AM-admit nurse must "borrow" restrooms from the other outpatient nursing areas. This may be another reason for the problem discussed earlier with the unit 300

nurses escorting their patients directly to their respective rooms: the patient then has the restroom all to herself. This situation again creates inefficiency since the AM-admit nurse must attend patients spread throughout the unit 300 area. As long as the present AM-admit room is being used, better access to restrooms cannot be achieved without major construction efforts. However, if the AM-admit room is relocated, the problem with restroom access should be addressed and minimized.

CHAPTER 6

RECOMMENDATIONS AND CONCLUSION

The purpose of this chapter is to pull the previously discussed observations, questions, and literature together into a complete recommendation for the Outpatient Services Department (OSD) facility. Issues such as organizational structure, marketing, facilities, and procedures are addressed. At the same time, areas in which further research might provide greater insight are indicated. Finally, a summary of this thesis and conclusion are presented.

The Organizational Structure

Outpatient Services is currently sharing a manager with the Chest/Allergy Clinic. These two departments should be separated, as shown in Figure 6.1, so that each department has its own manager reporting directly to the administrator of outpatient resources. This would facilitate OSD's communication with hospital administrators. It would enable one person to concentrate on long-range strategies. The new OSD manager could plan marketing campaigns, follow cost reimbursement changes affecting outpatient services, and work on ways to maximize net revenues earned by OSD. Surgeries are currently grouped into similar types, called Diagnostic Related Groups (DRGs), and third-party reimbursement is based on the DRG. At Tucson Medical Center, preadmission testing is financed through the surgery DRG payment.

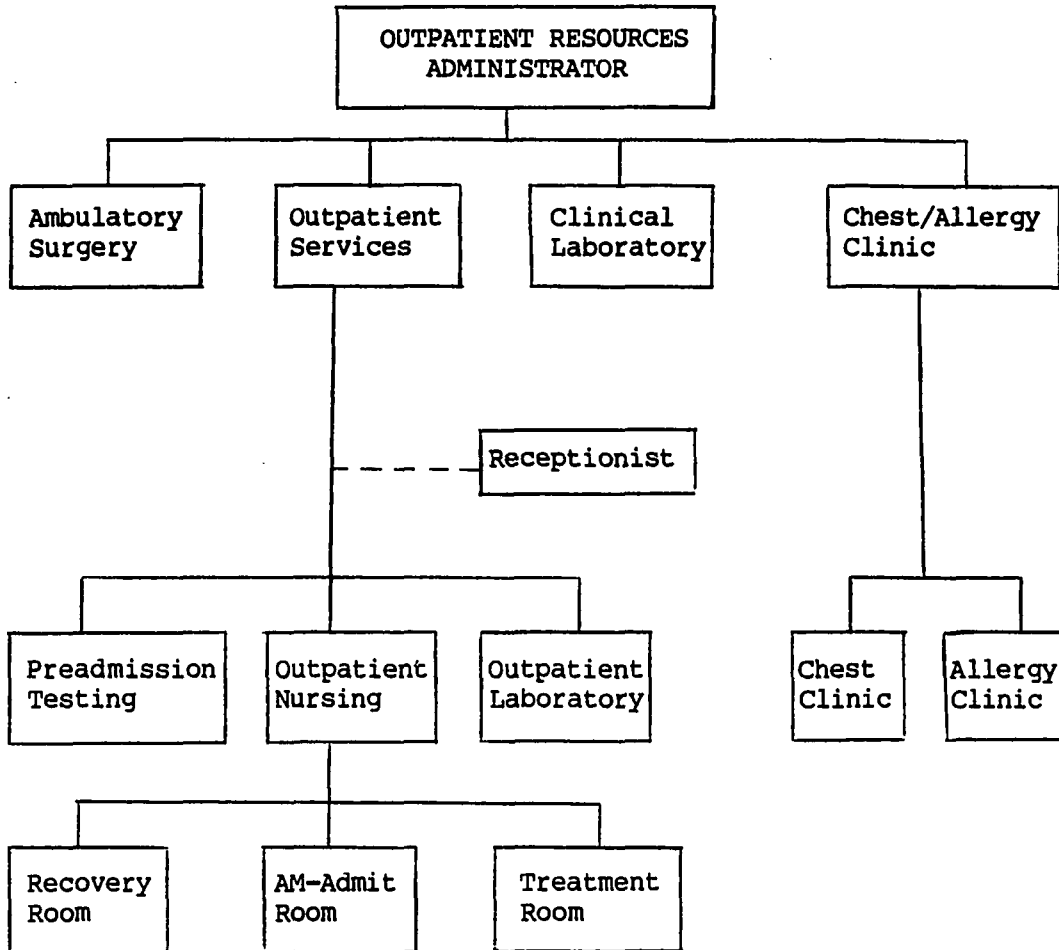


Figure 6.1 Proposed Organizational Structure of TMC Outpatient Resources Department

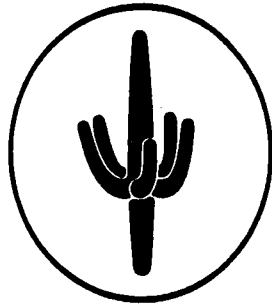
According to Hospitals magazine (March 16, 1985), TMC's revenues could currently be enhanced "because all diagnostic testing done on a preadmission basis is reimbursed separately from the DRG payment."

Since PAT is the initial point of contact for patients and thus plays an important role in hospital public relations, the OSD manager could conduct patient feedback surveys and develop patient education packets for patients. The OSD provides an important service and it should have a manager fully dedicated to performing long-range planning and evaluating possible improvements. Of course, this manager would also develop staff incentives and motivate employees to continue their excellent nurse/patient interaction.

Marketing of OSD

Many successful marketing campaigns are helped when a service or product is associated with a unique logo, e.g., Coca-Cola, Nutra-Sweet, and Bell Systems. If the OSD could develop a simple logo that distinguishes it from other departments in the hospital, the logo could be used for advertising as well as to mark entrances, identify associated nursing staff, and distinguish paperwork done in preadmissions from other admissions forms.

Since TMC has its own logo, shown in Figure 6.2, the OSD logo might incorporate the hospital's trademark into its own. When this is done, OSD will be distinguished as a unique service, and that service will be associated with TMC. Figure 6.3 shows a possible logo for OSD. Another alternative might be a sketch of a nurse's cap with the TMC logo in front. OSD staff could be asked to participate in a brainstorming



Tucson Medical Center

Figure 6.2 Current Tucson Medical Center Logo

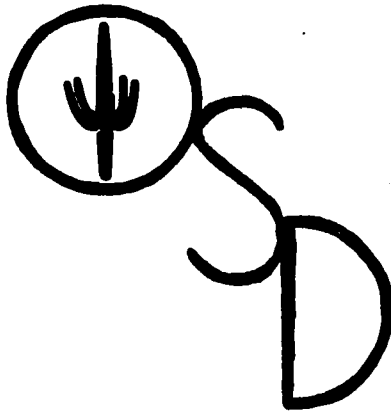


Figure 6.3 Proposed Outpatient Services Department Logo

session in order to develop a trademark they would be satisfied with. When used in marketing campaigns, logos provide a simple point of reference from which a patient can associate certain services.

Along with a logo, a name change may be helpful. It is true that the name Outpatient Services Department brings images of services far different from preadmission testing and outpatient nursing. In the literature, names such as Receiving Clinic or Screening Clinic are used. However, the word "clinic" is no longer recommended to outpatient departments in an effort to dispel the historical image of charity discussed in chapter two. Therefore, names such as Pre-surgery Services or Preadmission Services could be used. If a more general name is desired, Patient Care Resources is another suggestion. The OSD staff could also be involved in creating a new name. Whatever name is chosen, it should be short and easily-identified by the patient.

Once the logo and department name have been established, a simple, boldly-colored brochure could be sent to physicians. This should inform physicians of the location of PAT, the services provided by PAT, the characteristics of eligible PAT patients, and the advantages PAT offers the physician and patient. The logo and name should be prevalent throughout the brochure, as well as the telephone number at which PAT patients can be scheduled. A small insert could be provided that informs the physician that a sample preadmission packet will be arriving soon.

The preadmission packet is for the patient's use. Blanchet and Switlik (1985) delineate the following items that comprise an effective preadmission packet:

- one copy of the hospital admission form
- an information brochure on the hospital
- a patient instruction brochure indicating what items to bring on the date of admission
- a financial policy information sheet
- a sheet with directions for parking and finding the hospital entrance

A floor plan of the hospital might also be included, with the route to the preadmission testing office highlighted. This packet should be available in the physician's office for all PAT patients. When a physician responds favorably to PAT, packets should be delivered to his office as soon as possible. In the case of physicians already using PAT, packets could be mailed on the same day the advertising brochure is sent.

These preliminary marketing techniques should be developed, implemented, and monitored by the OSD manager. Then, research into other areas of marketing can be done, e.g., ways to encourage thorough physician's orders at the time PAT is requested.

OSD Facilities

As discussed in chapters four and five, outpatient nursing and the front office areas of OSD could be brought together. Patient routing was the only area of concern when combining the two services. Referring to Figure 6.4, the hospital layout, the Speech Therapy area is directly north of the front office area. Assuming that Speech Therapy could be relocated to another outpatient area, this space could

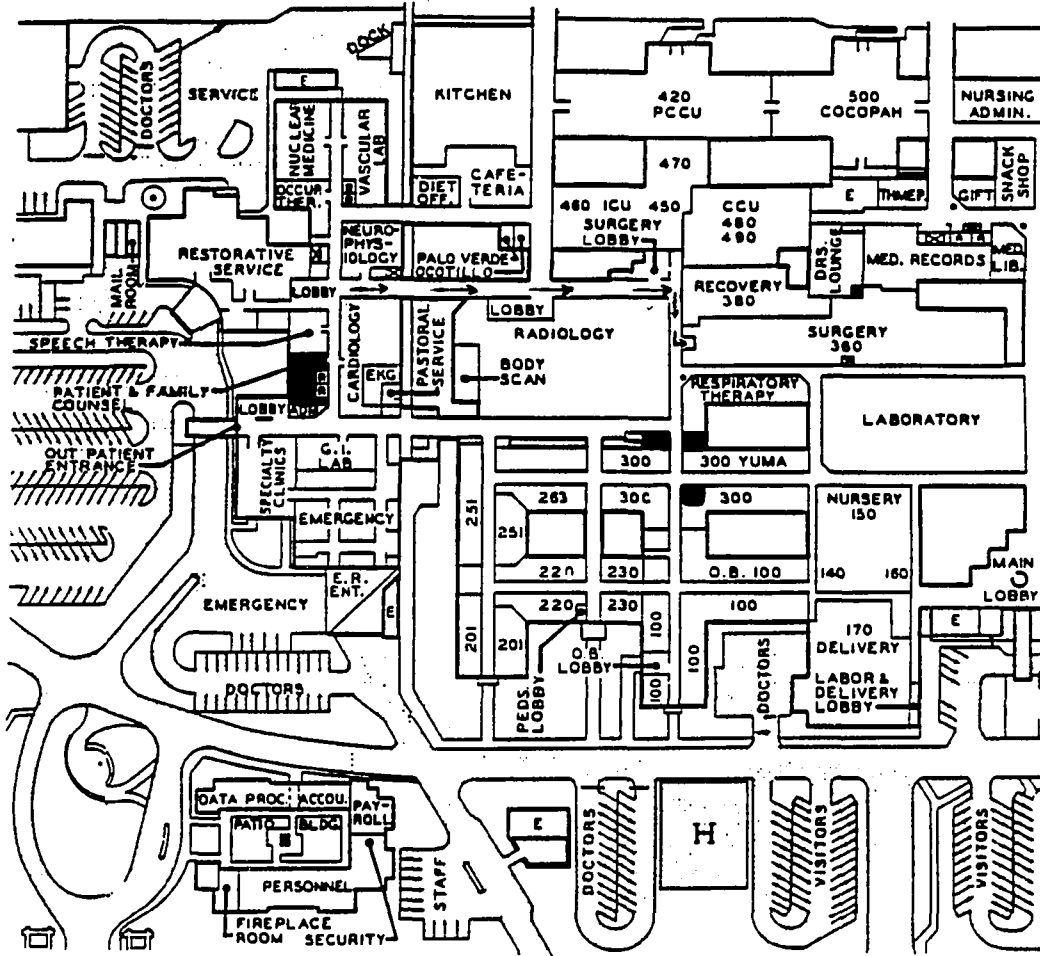


Figure 6.4 AM-Admit Patient Routing

be used for outpatient nursing. This meets the requirement of bringing the OSD together. It also facilitates a solution to patient routing: patients could be transported via the corridor that accommodates the radiology and surgery lobbies. With this route, family members could follow the patient as far as the surgery lobby. If X-rays are needed prior to surgery, radiology is on the same route. A small lobby near Restorative Service can accommodate patient guests, or the outpatient lobby could be used. This route avoids the congested outpatient admitting and outpatient lobby areas.

Within the relocated outpatient nursing areas, the AM-admit, recovery, and treatment rooms should be located in such a way that sharing of beds is facilitated. During the morning hours, the treatment area could be used to accommodate an overflow of AM-admits; in the afternoon the AM-admit room could be used to facilitate overflows in the other two rooms. Since the rooms from unit 300 would no longer be available, two additional beds should be acquired for use in the AM-admit room, yielding a total of six beds.

Further research should be done to determine exactly how many patients are currently being admitted to their respective rooms in unit 300. If the number is significant, more beds may be required. Further research into the arrival patterns of treatment room patients is required to determine if additional beds are needed. If the area is designed so that AM-admit beds and treatment beds are accessible by both nurses, a total of twelve beds might be adequate for the two areas. The addition of two chairs to the treatment area could resolve the overflow problem with a smaller capital investment, but it would also

restrict the use of the chairs to treatment room services only. If beds are added to the treatment area, they could be used for AM-admits or recovery room patients during overflow periods.

After combining outpatient nursing and the front office areas, the number of AM-admits or outpatients scheduled to enter surgery at the same time must be closely monitored. Since the alternatives for handling overflows would be restricted when outpatient nursing is no longer near inpatient care units, adequate overflow compensation must be provided and contingency plans must be designed.

The plans for relocation of the AM-admit room should include an increase in the number of restrooms available. A good ratio might be one restroom for every two patients. Further research into the number of restroom-oriented procedures performed would enable administrators to predict with greater accuracy the number of restrooms needed per AM-admit. The layout of the room should facilitate access to all patients for the AM-admit nurse. Also, if possible, men and women should be separated into different areas for greater privacy during morning admission.

The outpatient nursing area should be painted similar to the front office area, in pastel colors. Reading material should be available to all patients, and seating for one or two guests should be provided. This will facilitate a cheerful, relaxed environment prior to entering surgery.

During the eight-week study period, exam rooms 02 and 03 (shown in Figure 6.5) in the front office area were rarely used. Exam room 03

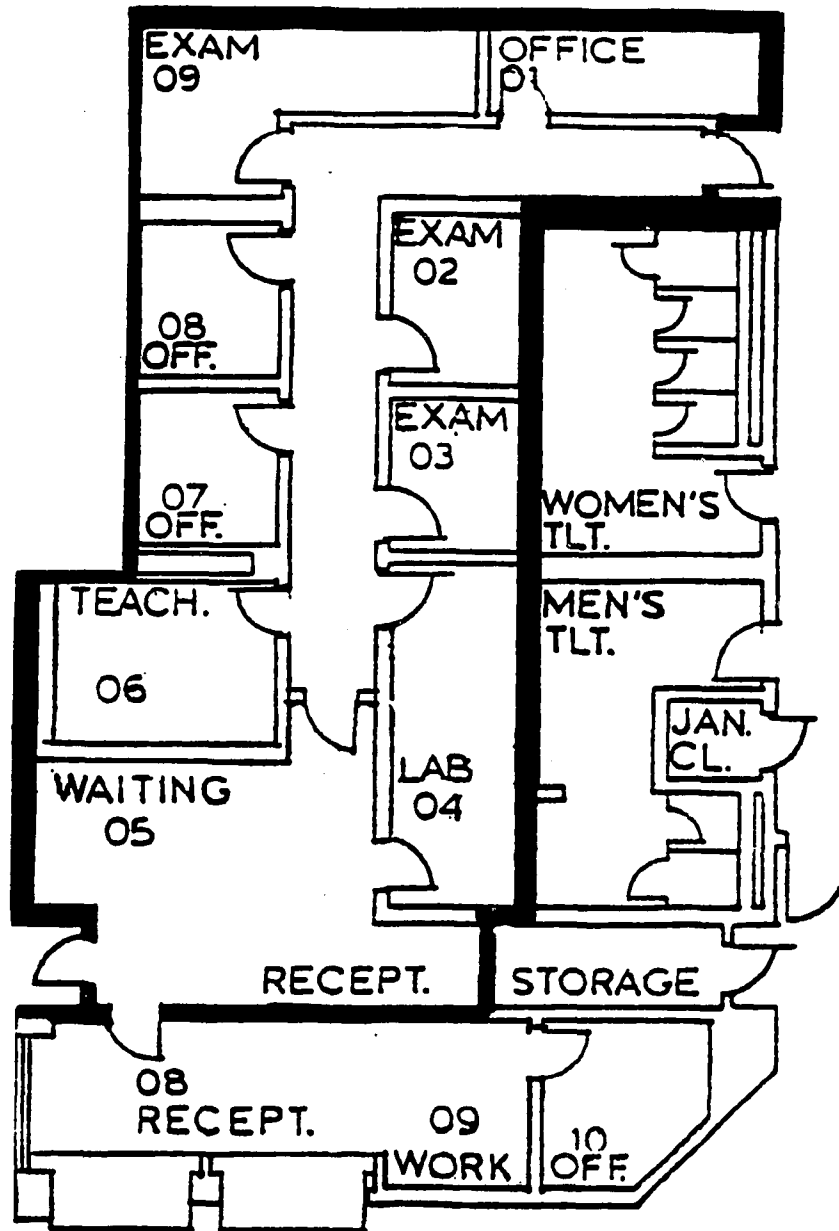


Figure 6.5 Under-utilized PAT Exam Room

was used occasionally when overflow PAT patients were interviewed. If possible, in a relocation effort, only two office/exam areas should be included--the third exam room can be omitted. The office used by the interviewing RN (exam room 09 in Figure 6.5) is ideal. Two of these offices are more than adequate for performing preadmission functions.

It should be noted here that the extra exam room is used, on occasion, for special applications. For example, when physicians were examining patients with certain characteristics on an outpatient basis, the extra exam room was allocated for the physicians' use. Before the third room is omitted, an evaluation of the number and types of specialty programs the OSD would like to get involved with should be performed. Then, the requirements of the facilities needed for the programs could be delineated and a special room set aside for these functions.

At the entrance to OSD, the new logo and new name, if applicable, should be clearly visible to patients entering via the outpatient entrance. Signs directing patients coming from other areas of the hospital should also be clearly marked with the OSD logo.

OSD Procedures

Within the new facility described above, several functions can be shifted or shared. The OSD receptionist should do all scheduling for PAT interviews and outpatient treatments. She should also take over the functions previously performed by the unit 300 clerks, e.g., prepare patient charts, take phone calls, and identify daily patient activity. When the tasks performed by the unit 300 clerks have been identified,

further analysis will reveal the possible requirements for an additional clerk in the OSD area. Clerical tasks currently performed by the PAT nurses should be delegated to the receptionist and/or OSD clerk whenever possible.

Another change in procedure should be that all morning admissions patients enter surgery via the AM-admit room. In order for the AM-admit nurse to process this volume of patients, the majority should have had preadmission testing prior to surgery. Also, patients belonging to HMOs should be called by PAT so that admissions paperwork can be partially completed and so that the patient can have the remaining information available when he enters for surgery.

In addition to these procedural changes, the operating room slips should be sorted by the scheduler so that PAT retrieves only the slips for AM-admits or outpatients. (PAT should receive all slips for these patients, regardless of whether the PAT request box is marked yes or no.) As discussed in chapter five, this would save time for the PAT nurses when they sort through the slips and still provide them with the names of potential PAT patients; it also requires no extra time for the operating room scheduler.

As discussed earlier, a PAT packet should be available in the physician's office and the OSD logo should be prominent on the packet and the OSD entrance. This will help the patient locate OSD; in addition, it will aid the TMC staff in determining where the patient should be. During the actual interview, PAT patients should be told to arrive one hour and 45 minutes prior to surgery. As presented in chapter five, this will reduce the wait time for PAT patients and still

allow adequate slack time for the TMC staff. Also, this can be included as a benefit of PAT in the packet literature: instead of arriving at 05:30 for surgery at 08:00, the patient can arrive at 06:15. Finally, the interviewing nurse should be assigned the hours of 09:00 to 17:30 to accommodate working PAT patients, as presented in chapter five.

Figure 6.6 summarizes the topics discussed in this thesis. When these preliminary procedural changes are implemented, further analysis for greater improvements can be performed by the OSD manager. Continued emphasis should be placed on teamwork, and staff members should be rewarded for sharing another's workload. These rewards could come in the form of comments (or ratings) on a performance appraisal, "team member of the month" awards, or monetary bonuses. With cross-training of the staff and an emphasis on teamwork, the Outpatient Services Department could become a powerful public relations asset to the hospital.

Areas For Future Research

The suggestions mentioned above should only be implemented when a cost/benefit analysis shows that the benefits of these suggestions are equal to or greater than any additional costs incurred. DRG payments for outpatient services are currently being revised, therefore, the administrators at Tucson Medical Center preferred to evaluate the above considerations based on their own cost structure. Further research into the exact costs associated with outpatient services and the savings provided by preadmission testing would be helpful to the hospital administrator.

Area	Major Problems	Recommendations
Organizational Structure	OSD shares manager with Chest/Allergy Clinic	Separate the OSD and Chest/Allergy Clinic; each with its own manager
Marketing	Easy identification of OSD facilities	Design an OSD logo which incorporates that of TMC
		Change the name of OSD so that it is easily recognized by patients
	Knowledge of existence of OSD services	Design simple, colorful brochure for physicians
		Utilize preadmission packet to familiarize patient with services
OSD Facilities	Combine PAT services with outpatient nursing services	Relocate outpatient nursing to Speech/Therapy area
	Accommodate overflow situations in nursing areas	Faciliate sharing of beds and restrooms between AM-admit and treatment rooms
		Research need for 10 - 12 beds for both AM-admit and treatment services combined

Figure 6.6 Summary of OSD Evaluation

Area	Major Problems	Recommendations
OSD Facilities	Aesthetics	Paint all OSD facilities in cheerful pastel colors, including the nursing rooms
OSD Procedures	Centralized scheduling	Either automate or allow OSD receptionist to schedule all PAT appointments and outpatient treatments
	Centralized AM-admissions	All morning admissions should enter surgery via AM-admit room
		PAT should be done for all AM-admit patients, including HMC patients
	Handling of OR Slips	PAT should receive only slips for AM-admits or outpatients.
Long wait for PAT patients prior to surgery	Request that PAT patients arrive one hour and 45 minutes prior to surgery	

Figure 6.6 Summary of OSD Evaluation (Continued)

Preadmissions and morning admissions procedures require greater attention in the literature. More examples of how other hospitals perform these function are needed; both the hospital administrator and the operations manager would thus benefit from detailed knowledge in these areas.

Another area requiring further research is the centralization of scheduling for all outpatient clinic within the hospital. Currently, each ancillary service handles its own appointments; physicians must sometimes call several areas within the same hospital to obtain tests for one patient. Although TMC is currently experimenting with a "One Phone Call Concept" to facilitate the scheduling of ancillary services, the literature offers few suggestions.

Another interesting area that might be researched further was brought out by a patient during the opinion survey. The patient mentioned the inconvenience of making arrangements for childcare when attending PAT. Research into other hospital departments that might benefit from a daycare room for children could be conducted. Through the use of auxiliaries or volunteers as attendants, the cost of this additional service might be relatively low. The area set aside would not have to be very large and the advantages may attract patients. At the very least, it would accommodate the children of patients' guests.

A coordinated preadmission testing program and outpatient nursing area enhance the hospital's ability to provide quality health care in a turbulent environment. This thesis has analyzed the Outpatient Services Department of Tucson Medical Center in depth. From observations and examples in the literature, areas such as organizational structure,

departmental marketing, physical facilities, and operational procedures were reviewed. When problem areas were identified, possible solutions were suggested that would aid in the effective and efficient delivery of outpatient services.

APPENDIX A

CRITICAL INCIDENTS TECHNIQUE QUESTIONNAIRE

Mr/Ms _____? I'm _____ calling from Outpatient Services at Tucson Medical Center. We're asking people their opinion of the service they received from the Outpatient Services Department.

- (Patient) a. Do you feel well enough to answer a few questions?
(Other) b. Is Mr/Ms _____ available or perhaps you can answer questions for him/her.

Tucson Medical Center wants to provide the best possible service and we want to know both our strong and weak points. Your response will be confidential, so please be frank.

The outpatient services department that I am referring to includes the preadmission testing service you received a few days before your surgery as well as the nursing service provided in the room you stayed in just before going to surgery. Do you remember going through the outpatient admitting entrance to the preadmission testing office? And then, on a different day, going to unit 300 before going to surgery?

- 1.) Can you recall an incident that gave you an especially good feeling while you were in the admitting, preadmission testing, or unit 300 areas? (identification of issue)

- 2.) Was there anything in particular that made you feel this way? (background or context)

- 3.) Could you tell me, briefly, why this is important to you? (so what)

- 4.) Can you recall an incident that gave you an especially bad feeling while you were in the admitting, preadmission testing, or unit 300 areas? (identification of issue)

5.) Was there anything in particular that made you feel this way?
(background or context)

6.) Could you tell me, briefly, why this is important to you?
(so what)

7.) You may recall that you arrived approximately two and one-half hours before your surgery. If you were to be admitted again, would you rather have your admissions tests and paperwork done just before surgery or would you rather stop by a day or two before surgery for your preadmission testing? (requested question as per TMC)

8.) How do you think that the Outpatient Services department could improve its service? (requested question as per TMC)

9.) Is there any other incident you can think of that you feel is important that I could write down? (opportunity for open comment)

Thank you very much for your time. Have a nice day.

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