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THE EFFECTS OF INFORMATION ON PATIENTS' PERCEPTIONS OF THEIR HOSPITAL ADMISSION: AN ENVIRONMENTAL INTERVENTION

City University of New York PH.D. 1981

THE EFFECTS OF INFORMATION ON PATIENTS' PERCEPTIONS OF THEIR HOSPITAL ADMISSION:

An environmental intervention

by

YONA NELSON-SHULMAN

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York.

1981

This manuscript has been read and accepted for the Graduate Faculty in Psychology in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

April 29, 1981 — Leanne W. Rivlin

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Abstract

THE EFFECTS OF INFORMATION ON
PATIENTS' PERCEPTIONS OF THEIR HOSPITAL ADMISSION:
An environmental intervention

by

Yona Nelson-Shulman

Adviser: Professor Leanne G. Rivlin

An intervention was undertaken in the Admitting environment of a large urban hospital for the purpose of alleviating patient stress due to long waits, congestion and lack of information. The intervention took the form of written and pictorial information: signs were mounted in the waiting area instructing patients about registration procedures and orienting them to nearby amenities, and literature about the hospital and the admitting process was distributed . The responses of 94 elective inpatients who received this information were compared with those of an equivalent patient group who entered the hospital under normal circumstances, with no information.

Informed patients were found to be more knowledgeable about admitting procedures and available amenities. They were more self-reliant and made fewer demands on staff. In contrast, uninformed patients rated the hospital less favorably and were found to have faster heart rates, indicating greater anxiety. Patients admitted under conditions of higher density were uniformly more negative in their responses than those admitted under lower density conditions. In certain instances, information was shown to mollify the more critical patients. Those patient sub-groups who benefited most and least from

the information are described. Practical and theoretical implications of these findings are discussed, with particular attention paid to the role of cognitive factors in mediating responses to stress and density.

Acknowledgments

The promise of confidentiality prevents me from mentioning by name all the patients, staff and administrators who cooperated with me in carrying out this research. I am particularly grateful to the patients I interviewed for sharing their thoughts and feelings with me at an extremely difficult time: the qualities of strength and concern for others displayed by many of the people whom I observed and talked with will not easily be forgotten. The risks and uncertainty which they faced enabled me to put my more mundane problems into the proper perspective.

I am also indebted to the staff and administration of Park Hospital. The Director of Admitting, her secretary, and the supervisors and manager of the Admitting unit were uniformly helpful, and attempted to provide me with the assistance which I required. Special thanks go to the Admitting registrars and staff technicians who tolerated my presence in very close quarters, and managed to do an excellent job under considerable pressure. Betty and Michael of the EKG unit were particularly valuable, as were Dr. Diamond and Dr. Nelson who provided the necessary medical expertise in ranking patient diagnoses for analysis.

Muchas gracias to Manuel and Julio for translating my patient letter and questionnaire into Spanish. The cast of Central Listing — Dianne, Pam, Pat, Manuel and the others — lightened my late night workload considerably with their optimism and humor. Vinnie in Facilities Planning deserves special recognition for understanding what I was trying to accomplish and assisting me with the necessary signage. The Director of Public Affairs was similarly enthusiastic and gave

permission and support for the intevention which I carried out in the waiting areas.

To the members of the Biostatistics Department -- notably Doug and Gary -- who provided me with an optimal environment for analyzing data and writing up and interpreting my results -- I am eternally grateful. Words are inadequate to express my appreciation to Gary F. for the kindness, support, caring and empathy which he displayed throughout -- not only towards me, but also to patients and colleagues in the Admitting area. He embodies, in his thinking and behavior, all the superior qualities which one would hope to find in a health-care provider.

My committee's encouragement was invaluable: Mort's contagious enthusiasm first sparked my interest in the topic of Admissions; Susan's positive reinforcement facilitated my progress; and the qualities of intelligence, concern, attention to detail and readiness to help which distinguish Lee as a researcher also made her an ideal adviser.

Finally, on a more personal note, I would like to thank my family for their unqualified devotion and support. My grandmother generously provided me with a place to stay. My sister Deena gave unstintingly of her time and emotional energy, and sustained me throughout the process. It is impossible to articulate my gratitude to Herb, whose strength, assistance and faith were so necessary to me in carrying this project to fruition. Most of all, I am indebted to my parents, and it is to them that I dedicate this dissertation. For my father, whose love of learning and deep social commitment set a perfect example

of scholarship ennobled by humane concerns; and in loving memory of my mother, whose warmth, charm, beauty and empathy so enriched the experience of those with whom she came in contact through her personal and professional activities. She imparted a special appreciation of life which her untimely death can never diminish, and her courage and selflessness in facing a terminal illness serve as a perennial reminder of the need to preserve human dignity and self-respect at all costs -- particularly in the treatment environment of a large hospital where physical and spiritual survival hang in such precarious balance.

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I. ILLNESS & HOSPITALIZATION

There is no doubt that illness poses a serious threat to the physical and emotional equilibrium of the individual. Hospitalization imposes an added burden, which is not only financial, but involves major changes in the social-psychological and physical world of the sick person. Studies have shown that most patients experience at least some discomfort and anxiety upon entering a hospital, regardless of the type of treatment they anticipate or receive (Houston & Pasanen, 1972; Mittelman et al., 1945). The emotional responses which hospitalization evokes may be attributed to several factors.

First, the realization that one's illness is no longer "under control"--in the sense that it cannot be treated at home by oneself or one's physician--can be damaging to one's sense of autonomy and physical inviolability. The need to depend on other people for assistance and support may undermine and demoralize normally self-sufficient individuals (Bloom, 1963; Brown, 1965). More specifically, the anticipation of surrendering basic care-taking functions to anonymous others can be a source of concern for patients (Coser, 1962). Even those who look forward to being in a setting where their illness can be treated by experts may feel somewhat apprehensive about putting their lives in the hands of strangers (Barnes, 1961; King, 1962).

Second, most patients enter the hospital with anxieties about the future. They fear permanent changes in their bodies and wonder whether their personal relationships with others will be impaired and whether they will be able to resume their normal social and work routines. Preoccupation with disfigurement, organ loss and even death are not uncommon in patients awaiting hospitalization (Brown, 1965). Antici-

pation of surgery evokes fears of bodily mutilation, loss of control induced by anaesthesia, and the trauma of post-surgical complications and difficulties. Patients admitted for medical procedures and diagnostic testing are equally apprehensive about what those tests may reveal and dread submitting to procedures which can cause extreme physical and psychological discomfort.

Finally, hospitalization requires patients to abandon the familiar places, people and behavior patterns which constitute their daily existence and adapt to an alien environment whose sights, sounds and smells may be expecially distressing to those who have just checked into the hospital (Barnes, 1961; Brown, 1965; King, 1962). Major adjustments in habits and life-style are in order if the newly-arrived patient is to accomodate to the hospital milieu. As a total institution, the hospital demands strict adherence to its routines, rules and norms, and regulates occupants' behavior by restricting their physical mobility, social contacts and psychological autonomy (Goffman, 1961; Rivlin, 1978). The rigidity which characterizes most institutions prevents individual needs from being satisfied and individual identity from being expressed (Rivlin, 1978). Inevitably, surrender of control to a medical institution entails a loss of physical and informational privacy for the patient. One's body is exposed to continual scrutiny, information of a personal nature is routinely demanded, and accomodations are usually shared with sick and even dying strangers (King, 1962; Shaw, 1974). Verbal exchanges with staff where more information is given than received by patients is a common complaint and heightens feelings of powerlessness (Goffman, 1961; Shaw, 1974).

Implicit in the stressful features of hospitalization discussed above is a perceived loss of control—over one's illness, one's body and one's physical and social environment (Field, et al., 1971). Whether or not patients are cognizant of all these factors prior to hospitalization, research has confirmed that they arrive at the hospital with fears about their future and often regard the admitting process with dread (Barnes, 1961; Houston & Pasanen, 1972).

Being admitted to the hospital represents the first step in the process of institutional induction and is therefore a critical time for both patient and hospital. The process and context of hospital admissions thus merit investigation for two main reasons:

a) The hospital image

b) Identity transformation

A. The Hospital Image

Since research has shown that first impressions are often lasting ones (Jones & Gerard, 1967), the initial contact between hospital and patient which occurs during admission has great significance for the patient's perceptions of and subsequent adjustment to the hospital. Feedback from patients and personnel indicates that the way in which patients are received into the hospital can set the tone for the remainder of their stay (Special Studies, 1965; Nelson-Shulman, 1979). Since admitting staff members are often the first representatives of the hospital whom patients encounter, it is crucial that they display a sensitivity to the needs of patients and their families.

Institutional practices and attitudes are also transmitted by the physical environment of the hospital in both its external facade and interior spaces. Although the image which patients have of a hospital can be confirmed or altered by their actual experiences inside, the first glimpse of the facility, its appearance and lay-out, can significantly affect the mood and expectations of arriving patients (Kirsners & Waters, 1972). There is much individual variation in building-type preferences: some patients prefer large, modern, antiseptic hospital buildings, because they feel the latest equipment and most sophisticated treatment techniques will be available in that type of setting; others prefer small, older hospitals that are not so intimidating and where more personalized treatment is expected (Kirsners & Waters, 1972). Patients going into the hospital for something they regard as major or serious may be willing to trade-off the relaxed intimacy of a small, local hospital for what they regard as the technological superiority of a large urban facility (Barnes, 1961). However, even

those who find the sight of an urban medical complex reassuringly up-to-date are likely to experience an increase in anxiety when treated in a depersonalized fashion by the staff (Brown, 1965; Kendall & Reader, 1972; King, 1962).

Thus, the physical and social environment both contribute to the overall tone and atmosphere of the hospital admitting area and must be examined to determine their respective and interactive contributions to patient perceptions and behavior. For hospitals, such an investigation is not merely an interesting exercise but an economic exigency, bearing directly on maintenance of census goals. It is becoming increasing apparent that medical care is only one aspect of patient care, and that frequently patients are more concerned with the non-medical aspects of their hospital stay (Barnes, 1961; Sussman et al., 1967; Taylor, 1970). Further evidence of this concern was provided by a study showing patient dissatisfaction with hospitalization to be more a function of their admission experience and room environment than of their medical care (Houston & Pasanen, 1972).

Although many hospital administrators seem concerned about the image presented to the public by the hospital, their efforts to improve the situation have not been very successful, mainly because patient needs and preferences have been inferred rather than directly solicited in hospital planning. The design of new or renovated medical facilities often reflects administrative priorities and/or staff needs rather than patient considerations (Brown, 1965; Rivlin, 1978). Obviously, the goals of at least three different user groups must be clarified so that design solutions which fit the needs of all concerned--patients and their companions, staff, administration, etc.--can be implemented.

B. Identity Transformation

The Admitting office functions as an intermediary stage between the hospital and the outside world (Rosengren & DeVault, 1970; Special Studies, 1965). It is a physical and psychological way-station between two sets of realities and polar opposites: sickness and institutional control versus health and personal freedom. In the physical and social context of admissions, an individual undergoes a striking transformation--from outsider, non-inmate, or "civilian" to insider, inmate or patient (Bard, 1979). Goffman (1961) regards the process of institutional admissions as a "systematic mortification of the self" since it entails violation of self-defining boundaries. The stripping away of individual identity is manifested in a number of hospital practices, such as substituting the patient's clothing and other personal effects for a drab, anonymous hospital gown. The practice of giving patients an identification number and a hospital bracelet when they are admitted to the hospital symbolizes an exchange of a similar nature. Rituals such as these serve to facilitate institutional control and surveillance at the price of individual autonomy and identity (Goffman, 1961; Tagliacozzo & Mauksch, 1972). Thus, admitting signifies the first step in an important transition which culminates in the acquisition of a new identity and acceptance of the patient role.

Exchange theorists might view admissions as a transaction between hospital and patient whereby the latter agrees to surrender autonomy and control to the hospital in exchange for medical treatment and, hopefully, a return to health (Bard, 1979). The voluntary nature of this transaction, however, does not necessarily minimize the impact of

an institutionalized transition to patienthood. People arriving at the admitting office are likely to be in a state of crisis. They are physically debilitated and emotionally vulnerable due to the sudden shift in their status and milieu, and require support from both the social and physical environment (Proshansky, Nelson-Shulman & Kaminoff, 1979). The threat to one's physical, social and emotional identity engendered by illness and hospitalization is only exacerbated by institutional policies and settings which foster depersonalization, helplessness and loss of control in their prospective clients. It is important to examine these external sources of stress so that their effects on the attitudes and behaviors of incoming patients and their companions can be determined and possibly attenuated.

In view of the real and symbolic significance of admissions, it is surprising that medical institutions have not initiated their own research on the psychological impact of admissions. Apparently, the process and context of hospital admission have not been regarded as particularly relevant to patient care by hospital administrators. While a number of studies have emerged from a psychological or sociological perspective to shed light on the experience of being a patient, few of these have dealt extensively—and none exclusively—with patient responses to the procedures and ambiance of hospital admitting. Although research has demonstrated the significant role played by the physical environment in patient treatment and recovery, the focus, to date, has been on post-admitting experiences, e.g. patient reactions to their room and floor, to the ICU, or to other patients, to the staff and hospital routines (e.g. Brown, 1965; Kirsners & Waters, 1972; Kornfeld, 1972; Olsen, 1978). Where ref-

erences to admissions do exist, they tend to be anecdotal and not based on systematically collected data. Still, the anecdotal nature of this information does not detract from its value and potential utility. The insights and critiques offered by several hospital researchers together with their suggestions for improving and humanizing the process of admitting proved to be a useful starting point for this study and will be cited in forthcoming sections.

II. EXPLORATORY RESEARCH

Background

The conceptual and methodological approaches which guided this study of hospital admissions are taken from the disciplines of Environmental Psychology and the Qualitative Methodological school of Sociology. Both fields stress the importance of studying real-world events, rather than laboratory-defined phenomena, and seek to understand the behavioral context before drawing conclusions about the event or system in question. Implicit in the need to preserve the "integrity of person/physical setting events" (Proshansky et al., 1976, p. 326) is the assumption that systems are dynamic and changeable and therefore require a broader time perspective than conventional experimental studies normally allow. The concern for ecological validity which informs the work of most environmental psychologists is shared by those qualitative researchers who advocate grounding theory in empirical data in order to understand the social reality of behavioral systems (Glaser & Strauss, 1967; Schatzman & Strauss, 1973). Consequently, it was felt that meaningful hypotheses concerning the psychological impact of hospital admissions could only be derived from extensive contact with the setting under investigation.

In addition, the Lewinian goal of "action-research" dictated a problem-focused approach to the topic. It also led the researcher to attempt an intervention in the setting as a means of solving some of the problems which were uncovered during the initial observation phase.

In order to understand the goals and functioning of hospital

admitting in a variety of settings, a number of inpatient admitting areas in hospitals of differing size and character were observed and interviews were conducted with the people in charge. The facilities observed ranged from a small community hospital in rural New Jersey to a medium-size public hospital serving the population of Newark to a large voluntary teaching hospital in New York City.

Observations showed that the average waiting time as well as the comfort and opulence of the waiting rooms varied according to the size of the hospital and the type of patient population it served. However, there was little difference across sites in the admitting procedures themselves. The system for room reservations, the paperwork and record-keeping, and the intake procedures were all practically identical. The reasons for this procedural uniformity are perhaps best understood by taking a systems approach in evaluating the operational goals of hospital admitting departments.

First, admitting serves a gatekeeping function, attempting to control input into the system (i.e. regulate inpatient flow) in an orderly fashion so as to prevent the organization from being overwhelmed. If demand exceeds capacity, as it frequently does in the hospital, then new applicants, or patients, must be put in a queue according to some strategy, such as priority of needs. Ideally, there is sufficient overlap or complementarity of needs so that patient, staff and organizational priorities do not compete too drastically. Otherwise, serious conflicts may arise which can threaten the equilibrium of the organizational entity (Special Studies, 1965).

Second, the organization must keep track of all new members and be able to locate them at all times. In the case of hospitals, pa-

tient records must be scrupulously kept to provide continuity of care during hospitalization as well as in possible follow-up treatments, should patients return to the hospital at a subsequent date. Third, every large organization stresses the public-relations function of those departments which maintain contact with non-members and prospective clientele. This is particularly true of service-oriented enterprises. Evaluations of these services tend to be qualitative, and treatment is often assessed by the absence of complaints and overt emotional distress on the part of users—in this case—patients and their companions (Special Studies, 1965).

Finally, the role of the department as liason with other departments and outside organizations should be clarified. The volume of paperwork involved in collecting and disseminating patient data, while often regarded as needlessly time-consuming and repetitious by patients, is part of a bureaucratic process which new applicants to most large organizations must endure. It is not only the desire to keep track of patients, but spiraling hospital costs and increased institutional accountability which have made extensive record-keeping necessary for both patient insurance coverage and hospital protection. In addition, information about new patients must be supplied to various hospital departments which provide medical, social and leisure services for patients as well as information to visitors concerning the patient's status and location in the hospital.

Of crucial importance is understanding where admitting fits into the larger hospital system in terms of its status in the hierarchy. Since the functions performed are mainly clerical, and the staff largely non-medical, there is a tendency on the part of hospital admini-

strators to view the admitting unit as less important to hospital operations than direct patient-care services. The consequence of such a view is that admitting departments often receive low priority in the allocation of funds and little support for innovative ideas and ventures.

After observing the similarities and differences among various admitting departments in different hospitals, one site was targeted for an in-depth research project. In November, 1978 permission was received to explore the major problems encountered by patients in their admission to Park Hospital.

SITE DESCRIPTION

PARK HOSPITAL

Park Hospital is a 1,212 bed voluntary teaching hospital located on the Upper East side of Manhattan. It was founded in 1852 and moved to its present site in 1904 where it now covers four city blocks. Several additions to the hospital complex in the early and mid-1900's account for its sprawling size and the deterioration of some of its pavilions.

The lay-out of the hospital makes navigation through its underground labyrinthean corridors extremely problematic for anyone who does not have daily contact with the institution. Lacking a clear and comprehensible signage system, the hospital often gives the impression to newcomers of being overwhelming and unmanageable, as evidenced by the frequency with which visitors get lost and must ask directions before they reach their destination.

The admitting reception and testing area for scheduled admissions is located on a main avenue (The other points at which patients may enter the hospital are through Maternity, Outpatient, and Emergency Departments, located in different parts of the hospital.). A blue canopy extends from the sidewalk to the building entrance to facilitate entry during bad weather. During the day, a doorman or guard is usually present, and an information booth is quickly visible once inside the double glass doors. The first door on the right, usually open, is the entrance to the Admitting Suite, which consists of a waiting-room, a front desk and office area where patient folders are kept and patients are logged in, another office containing various equipment and machinery and a carpeted luggage rack, and further down the hallway, inter-

viewing cubicles. A narrow corridor runs through this office complex, which contributes to the congested traffic flow at peak hours. In 1977, a testing area was added to the admitting complex, creating an X-Ray and EKG unit with dressing room and waiting area adjacent to the office and the existing Blood Lab across the hall (see Figure 1). These additions were made in response to numerous patient complaints about long waits for tests, which had necessitated going to other parts of the hospital, waiting in long lines and having to dress and undress several times--all of which dragged out admissions unnecessarily and often caused the hospital to lose track of incoming patients for several hours. The changes were also made in response to the perceived need of administrators and trustees to shorten and gain better control over the admitting process and to enhance the image presented by the hospital to the public.

Now, with the new one-way patient flow, patients enter, give their names to the clerk or volunteer at the window or front desk, present their insurance cards, which are immediately xeroxed, and wait in one of two waiting rooms for their name to be called as soon as their room assignment has been finalized. Patients are interviewed by admitting staff in one of five cubicles. There they sign insurance forms and payment guarantees, and receive an identification bracelet. If testing is required, they are escorted by the interviewer to the blood lab waiting area. After blood work is completed, the lab technician escorts them to the X-Ray/EKG area where they undress in a booth, don a hospital gown, undergo the required tests, and are escorted by a technician, volunteer or patient-flow coordinator back to the original waiting area, where their companions have

Figure 1

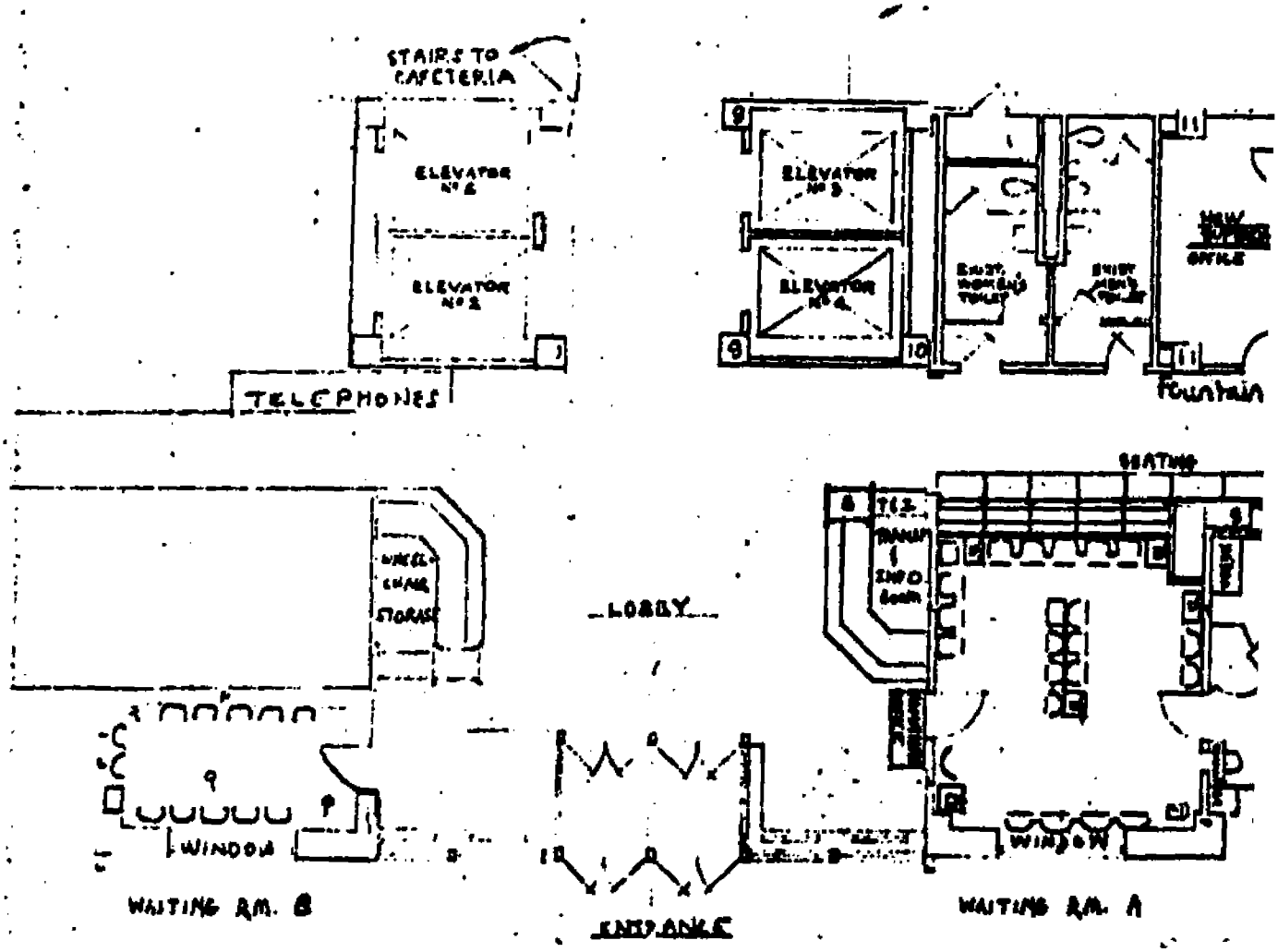
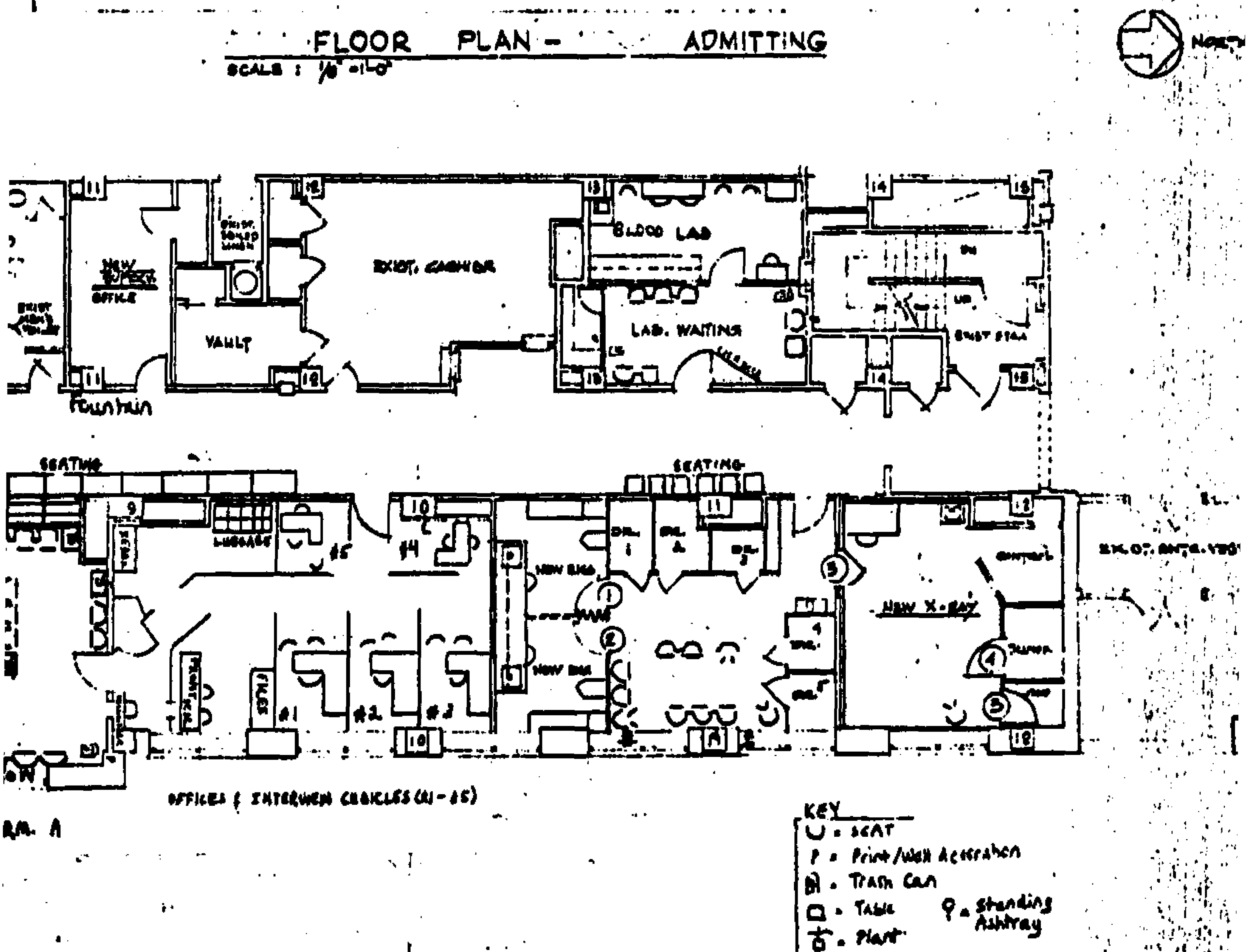

STAIRS TO CAFETERIA
ELEVATOR No 1
ELEVATOR No 2
TELEPHONES
ELEVATOR No 3
ELEVATOR No 4
Fountain
SEATING
LOBBY
WINDOW
WAITING RM. B
WAITING RM. A
ENTRANCE

Figure 1


FLOOR PLAN - ADMITTING
VAULT
BLOOD LAB
LAB. WAITING
SEATING
SEATING
LUGGAGE
FILES
NEW X-RAY
Fountain
KEY
= SEAT
P = Print/Wall Attraction
= Trash Can
= Table
= Standing Ashtray
= Plant

remained. There, they wait for a transporter who escorts them to their room (see Figure 2).

This newly-centralized and streamlined process enables the admitting staff to retain control over the patient and ensures a more rapid admission to the hospital.

The Admitting office is open from 8 a.m. to midnight daily, which means that staff members work in overlapping shifts. After midnight, admissions are handled by the Emergency Room or by Maternity Admitting, at different locations in the hospital. Since the operating rooms are closed on Saturday and Sunday (except for emergencies), Sundays are usually the busiest days, because of all the empty beds which have to be filled, and Fridays are the lightest.

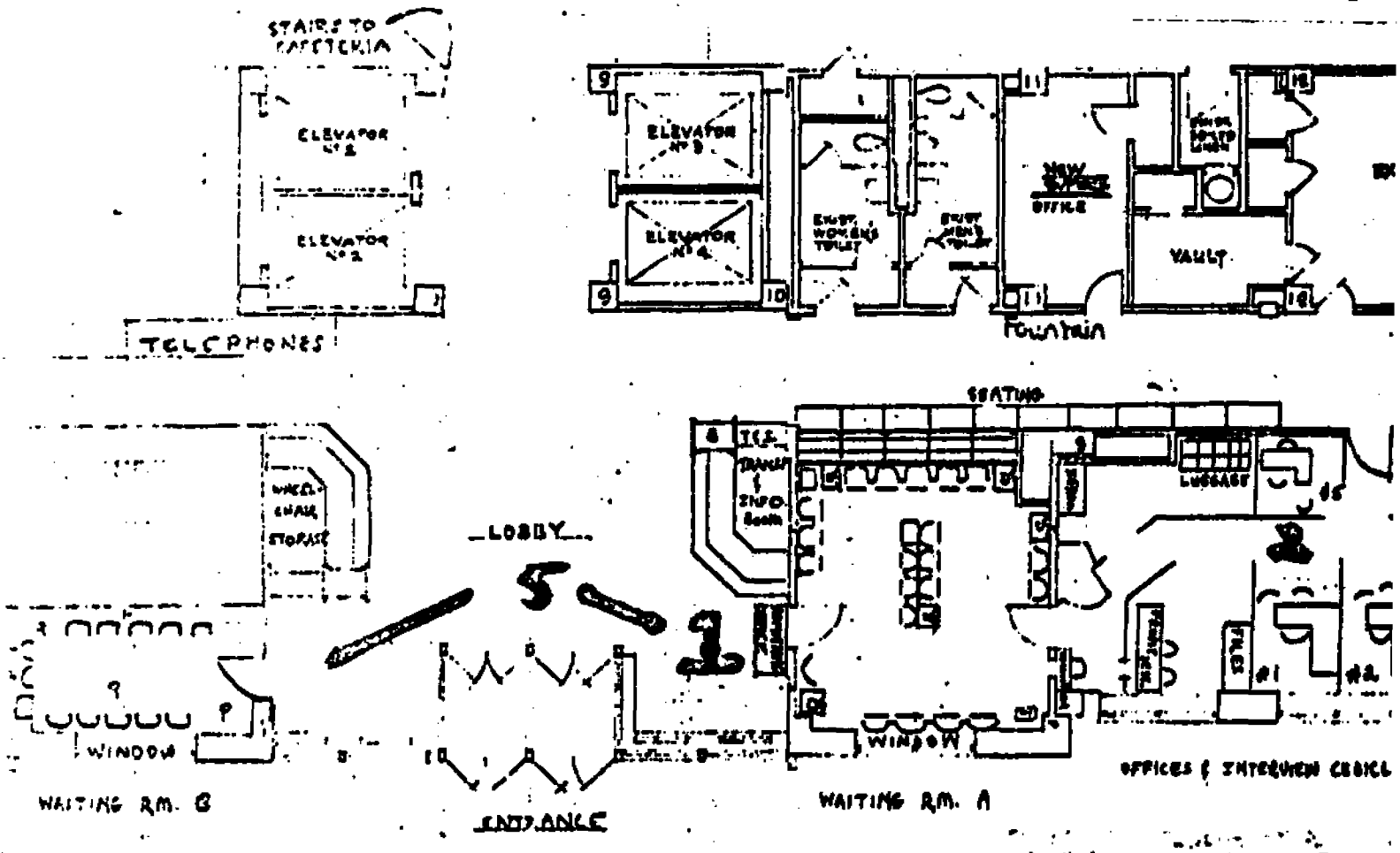
The Admitting office staff consists of a manager, four supervisors and 16 staff workers. There is also a pre-admitting staff of four, located in another office. Their job is to send out questionnaires to patients whose room reservations have been booked more than two weeks in advance. If patients fail to return the completed questionnaire or if they have not been booked sufficiently in advance, then pre-admitting staff will attempt to gather as much information as possible by contacting the patient on the phone several days before admission.

Supervising all hospital admissions are the Director of Admitting and the Assistant Director, located in Central Listing, where reservations are taken, the bed board (showing the location of each patient) is maintained, patients are contacted about their arrival time, and census information (patient statistics and locations) is disseminated via teletype to the rest of the hospital.

The atmosphere in both Central Listing, which has a staff of 20,

Figure 2

Figure 2: P
Diagra



NUMBER CODE

1 Patients Register

2 Admitting Interview

3 Blood Test

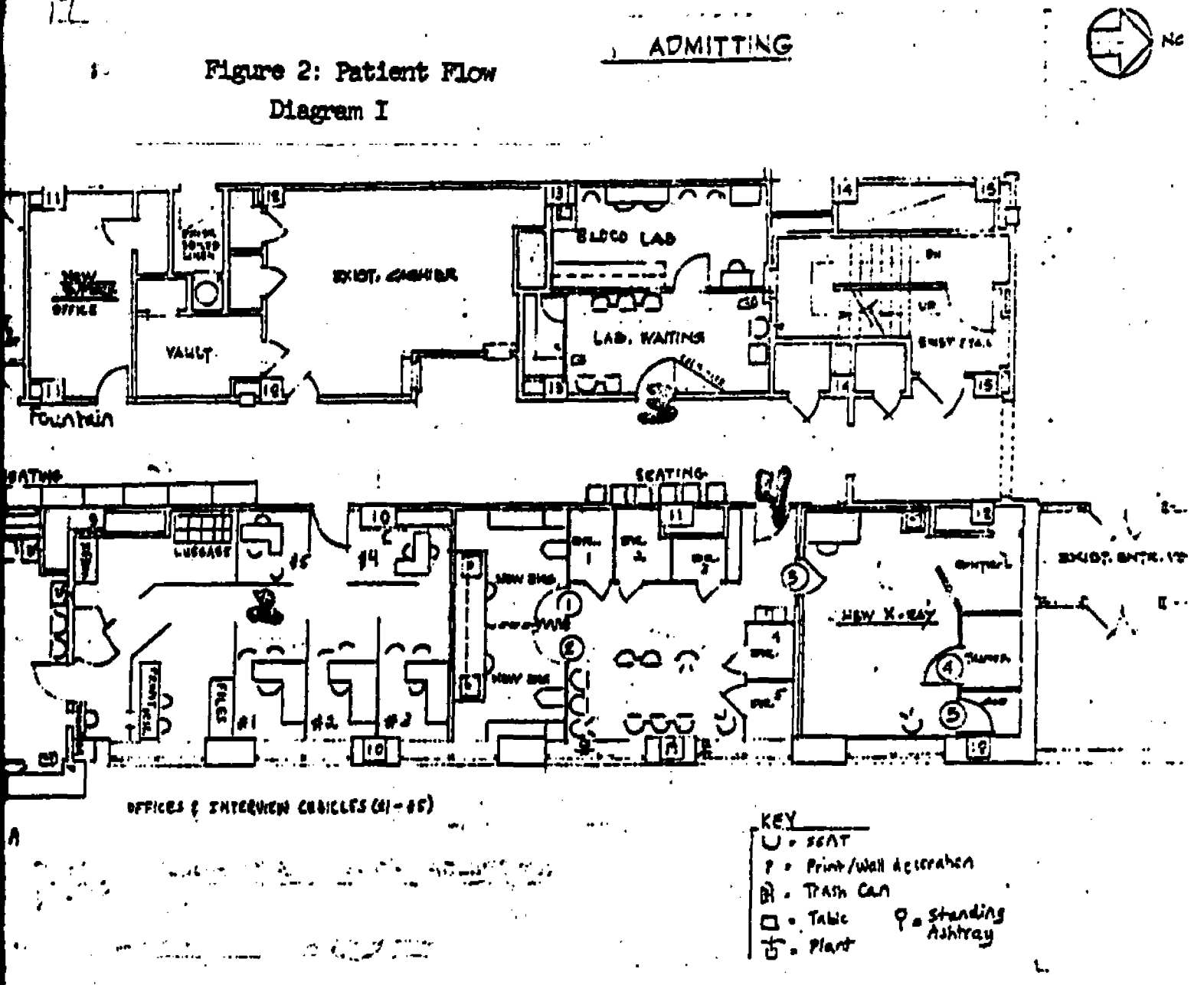
4 X-Ray/EKG

5 Return to Waiting Room A or B

Note. Patients wait
A or B between Steps

12

Figure 2: Patient Flow
Diagram I



Note. Patients wait in Waiting Room A or B between Steps 1 and 2.

and Admitting can be frantic, especially during peak hours, when the attempts to match patients and available beds are fraught with numerous difficulties, involving interactions with housekeeping staff, nursing services on each floor, resident house staff, attending physicians and their secretaries, and the transportation and information department (T & I) which supplies escorts to take patients to their rooms. The necessity of interfacing with these and so many other departments in the hospital system makes complications and delays more likely, and illustrates the complexity and multi-faceted nature of the admitting system. Communication is obviously critical, but can be problematic, since admitting operations are spread throughout the hospital. Central Listing and Admitting are located on opposite sides of the hospital, but the need to be in constant contact forces them to depend on the telephone and pneumatic tube for communication. Busy telephone lines require redialing and may cause further patient delays, which in turn produces strains and anxieties among those waiting and intensifies the pressure on staff to expedite the admission or deal with mounting patient frustration and distress.

Description of Interior Space

The main waiting area (Waiting Room A on Figures 1 and 2), where patients first enter and wait to be interviewed measures 17 x 19½ feet, although its slightly irregular shape makes for less available space. Above the entrance door is a blue sign on which ADMITTING OFFICE is printed in white letters. The room is sunny and cheerful, decorated in warm colors and looks fairly new, having been redecorated in 1977, and recarpeted and repainted within the last year. It was expanded in 1975 to accommodate increasing numbers of patients, but its size is still inadequate, given the fact that many patients are accompanied by at least two other people. Carpeting was installed at that time to reduce noise and give the waiting room a less institutional appearance, according to the Director of Admitting. The carpeting is a little worn and stained and generally has to be replaced yearly; its reddish-orange tone is color-coordinated with the seating, window-curtain and wall-paper. Seating capacity is 21, and chairs are joined together for ease of maintenance and to create more room for wheelchairs, according to the Director.

There are five units of tandem seating, most around the periphery with two rows of back-to-back seating in the center (see floor plan). Each seat is armless, covered with orange or yellow nylon wool, and supported by a black metal shell. Although the fabric is a bit worn, the seats are comfortable and were chosen with consideration of long patient waits and good back support. Attached to one or both ends of each seating row are white end-tables, on which there are plants, and, occasionally, magazines. These tables are often used as luggage racks or as extra seats when the waiting room gets really full. There

is one large window which looks out on the Avenue, and since it is on ground level, one can see in as well as out. The drape is color-coordinated with the chairs, and a plant and framed patient bill of rights stand on the windowsill. Two of the walls are papered in orange and yellow-stripe (torn and scuffed in one spot), and the remainder are painted white. There are prints on the walls in addition to a no-smoking sign and an announcement about the hospital gift shop, located in another part of the hospital. Supplementing the natural light are flourescent units which are flush with the white accoustical ceiling tile. The ceiling treatment remains uniform throughout the admitting area. There is one wastebasket and no ashtrays, although cigarette butts have been observed at the base of plants, and there are now hand-written signs taped to the large plants, indicating that they are not trash receptacles. Magazines are provided by staff or Support Services committee, but frequently disappear, according to the Manager of the Admitting office.

There are no patient booklets nor is there a clock in either of the waiting rooms, although there is a clock in the X-Ray/EKG area. Piped-in muzak can be heard some of the time, often faintly, and the temperature in Room A is usually warm. The doors from the main corridor and from the admitting suite opposite both open into the waiting room and partially block from view those patients sitting adjacent to them. There is a sliding glass window on the wall opposite the entry door, behind which sits a volunteer, who, when present, takes the entering patient's name and other information. If not, the patient must go through the doorway to the front office, where a rectangular opening in the wood and glass partition connects seated front-desk

personnel with standing patients. There is no information immediately available to entering patients as to where they should sign in or what they should do. Most just look around, ask other patients or confer with their companions about what to do. During busy times, they simply join the line waiting to register.

When patients are called to be interviewed, the interviewer takes their luggage and puts it in the carpeted luggage rack in the first room on the left, containing the xerox and imprinting machines, and continues with the patient (and with the latter's companion if so desired) into one of the interviewing cubicles, which are constructed of wood and amber Plexiglass partitions extending from a few inches off the carpet to a few feet from the ceiling. There are no doors to the cubicles, and the interior consists of an L-shaped desk, typewriter, some wall shelves and several plastic contour chairs. According to the Director, the reason for the openness is to increase light and circulation as well as facilitate wheelchair entry, communication with the front desk and the job assignment and control functions of the supervisor. After the interview, the patient in need of tests is escorted to the appropriate area, while companions are instructed to wait in the side corridor or return to Waiting Room A.

The blood lab across the hall was renovated in 1977. Its outer waiting area seats six, and has the same color-coordinated carpeting, wall-treatment and joined armless seating as Waiting Room A. Inside are work-tables, desk and chairs for two lab-technicians and patients, as well as counterspace and a sink.

Adjacent to the admitting office is the new X-Ray/EKG testing, waiting and dressing area. The waiting area consists of three units

of armless yellow and orange vinyl seating, some attached and some swivel, seating a total of 10 people.

Window plants add a cheerful touch to this sunny, attractive room. Carpeting and wall-treatments are the same as in the other waiting areas, and continue into the dressing booths and the two adjoining EKG Rooms, which are separated by a collapsible vinyl curtain and contain the necessary EKG equipment, an examination table, and a sink. Of the five dressing booths, one is used for storage and another contains a small refrigerator to provide juice for waiting patients. Inside each booth are hooks, clean dressing gowns, a receptacle for used gowns, large plastic bags and English and Spanish instructions for putting on the gown and putting clothes in the bag demonstrated by a picture of a man in the gown. Despite this illustration and the verbal instructions of staff to undress from the waist up, patients often fail to follow directions and come out to seek clarification about what articles to remove and what to do with their clothing. According to the nurse who is patient-flow coordinator, patients are usually too tense to listen, and often put the gown on backward (female patients especially) and have to return to change. This led to the addition in ink of the words "Open in Front", with an arrow pointing to the gown which the man in the picture is wearing (V.S., 1979). There is also a sign on the door, saying, "Please Lock" in English and Spanish, since patients frequently forget to do this, and often are surprised by another patient, since there is no way of telling which booths are occupied from the outside.

Across the main corridor from Waiting Room A is another waiting area, much narrower and shabbier than the former, labeled WAITING

ROOM B. This room measures 17 x 9 ft., and aside from two prints on the wall, is sparsely furnished and cold in appearance, in contrast to the waiting area across the corridor. There is no carpet on the speckled linoleum tiled floor, which is often littered with cigarette butts and food wrappers. The room seats 12-13 along its periphery in three vinyl and chrome units joined at the base. The padded brown vinyl seats are battered and discolored. Walls are painted a dull beige, and a dingy window-curtain, at last observation, had been removed, with half-drawn window-shades providing the same visual access to the Avenue as in Waiting Room A and the X-Ray/EKG Waiting area. Supplementary fluorescent lighting is seldom turned on in this room, which is generally cooler and better ventilated than the one across the hall. The room also contains a black metal table, a waste-basket and three standing ash-trays. Smoking is permitted here, although not all occupants come here to smoke, as this is the designated overflow area when Waiting Room A's capacity has been exceeded, which can frequently occur between noon and 5 p.m., Sunday - Thursday. Waiting Room B is quite drab and institutional-looking, and creates problems for patients who fear that they won't hear their names being called by interviewers, as well as for staff who have to call out patients' names in both waiting rooms and sometimes in the main corridor, where patients spill over when both waiting areas are full. The corridor which separates the two waiting areas is a main thoroughfare for the hospital, creating much additional traffic and bringing in cold air during the winter. Consequently, this corridor where patients sometimes have to stand and wait for long periods of time, can become very drafty. This situation may explain why Waiting Room

A often seems over-heated. In addition, there is a chronic ventilation problem in the waiting and office area which becomes problematic in the summertime.

The wood and glass Transportation & Information booth is located in the lobby, as is the clock. Adjacent facilities include telephones which are visible off the corridor on the left, and a drinking fountain and ladies' room (1 toilet, 1 sink) and men's room (urinal, toilet, sink), not visible, off the corridor to the right. The cafeteria is a 2-3 minute walk, but difficult to find, as it requires going downstairs and through a confusingly-signed, winding corridor. It is also not a particularly attractive place in which to eat or wait. Sometimes patients who must wait for several hours are given meal passes by the Admitting office; however, there is no way of paging patients once they have left the Admitting area, and it has happened that a patient's admission was delayed by going to the cafeteria.

PATIENT POPULATION

A total of 36,000 patients were hospitalized at Park Hospital in 1978, approximately 70% of whom came through this Admitting office. Although admissions rates vary according to day of week and season of year, an average of 75 patients are admitted daily, and about 50 of these undergo testing as well. The majority of these admissions (about 70%) are Elective admissions, who may be scheduled as much as two months in advance, and the remainder must be in the hospital within 10 days or 24 hours. Children and psychiatric patients are also admitted here, usually in the morning.

The socioeconomic status of Park Hospital inpatients is quite varied. 1978 figures on the pay statue of inpatients (excluding Obstetric, Psychiatric and Pediatric patients) show that 38% were covered by Medicare, 29% by Blue Cross, 18% by commercial insurance or were self-paying, and 16% were covered by Medicaid.

Approximately 84% of these inpatients are under the care of a private physician. The majority of these, approximately 70%, are booked into semi-private accomodations, which are usually 4-bedded rooms. Private patients, who have their own rooms, account for the remaining 14%. Clinic patients, who constitute approximately 16% of the total inpatient population, are assigned to separate 4-bedded rooms by the house staff.

Although 59% of the patient population is female, when Obstetric patients are eliminated, the percentage is reduced to 51%. With regard to religion, the largest number of inpatients are Jewish (39%), followed by Catholics (34%), No Religion (15%), and Protestants (12%).

Ethnically, the inpatient population is mixed. The majority of

elective patients are White (approximately 78%), with Black and Hispanic patients constituting about 11% respectively of the total.

PARK HOSPITAL ADMITTING POLICIES

According to Dr. Goldwater, a former hospital director and one-time Commissioner of Health & Hospitals for New York City, the best hospitals are those which attempt to deal with the patient's mental states--the anxiety, distrust, irritation, boredom and shame which are the natural results of exposure to most hospital environments (Goldwater, 1947). This dictum has been incorporated into the objectives of Park Hospital's Admitting Department, which emphasize responsiveness to patient needs and the significance of the initial patient-hospital encounter (Park Hospital Admitting Policy & Procedures Manual, n.d.). Among the stated operational objectives are a commitment to courteous, efficient and prompt reception and treatment of patients, including full explanations to patients and their families, accurate record-keeping and dissemination of information throughout the hospital, as well as a commitment to maintaining a high census (full bed utilization). Personnel are expected to receive training in interviewing techniques and community relations, presumably to decrease the distance which can develop between patient and staff in a large institution.

The effectiveness of this training in patient sensitivity and its continued emphasis by supervisory personnel is borne out by the scarcity of complaints about staff treatment in patient letters and interviews, and by the cordial and helpful demeanor observed, with rare exceptions, in patient/staff interaction. In general, a positive feeling seems to prevail among co-workers, which is contributed to by the largely non-authoritarian manner of Admitting supervisory personnel.

According to the Park Hospital Admitting Manual (n.d.), the primary functions of admitting include:

1) control of patient flow into the hospital

2) initiation of patient records

3) patient contact, i.e. assisting patients to prepare for admissions by contacting them beforehand to give pertinent information about admission and to gather social and financial data which can be forwarded to the appropriate agencies if assistance in the hospital is needed

4) initiation of patient care in the hospitalization cycle—which includes services for patients once they've arrived, e.g. being greeted by a doorman or volunteer, allowing patients in need of acute care go directly to their rooms, explanations of non-medical forms to be signed by patients, assurances of confidentiality regarding all communications and records, etc.

Although the role of hospital admitting in patient care has not been accorded much recognition by hospital administrators, Park Hospital's Director and Trustees have acknowledged the importance of admitting in terms of its public-relations functions, which led to the decision to centralize the patient-contact functions of admitting, followed by a renovation and expansion of the Admission Testing Area.

IV . EXPLORATORY STUDY: METHODS AND FINDINGS

Methods

Interviews: An attempt was made to elicit information from a broad spectrum of people associated with admitting at Park Hospital. Interviews were conducted with the following Administrative personnel: the Director and Assistant Director of Admitting, the Manager of the Admitting Reception area, the Director of Pre-Admitting services, and the Patient Representative. Staff members interviewed included: the Patient-Flow Coordinator, an Admitting supervisor, two Admitting interviewers, two Central Listing employees and two EKG technicians. Informal conversations with Volunteers and Transporters (Patient escorts) were also helpful.

Fifteen patients were interviewed after they had completed the entire admitting sequence. Questions dealt with reactions to their admission, evaluations of the physical setting, staff treatment, and what they liked most and least about their experience.

Observations: In order to become acquainted with the various facets of admitting, the researcher observed the operations of staff in the admitting reception area as well as in the central listing area, where room reservations are taken, bed assignments are made, and the patient census originates.

Time-sampling observations were carried out in the reception area, where a patient count and patient activities were recorded at 20-minute intervals.

Event-sampling observations were also undertaken in the reception area. An attempt was made to record questions and complaints made to front-desk staff by patients or their companions. Also, any emotional

outbursts, e.g. anger, crying, were recorded along with the source of provocation.

Tracking: Ten patients were selected at random and tracked from the time they checked in at the admitting office until the time they arrived at their room, where they were asked to evaluate the various aspects of their admission. The patient break-down was as follows: 5 males and 5 females; 2 Hispanic, 1 Black and 7 White, ranging in age from 3½ to 57, the average adult age being 41. Four were medical patients, four surgical patients, and two were pediatric patients (parents of the latter were interviewed). All had blood tests and, with the exception of the children, EKG and/or X-Ray tests as well. Half were alone and half were accompanied by one or two companions.

Archival Information: The Admitting Policies & Procedures Manual was reviewed and used as a reference. Also, the Patient Letter File was examined so that the researcher could get an idea of the most frequent grounds for written complaints or compliments. Letters of complaint far exceeded letters of praise in this file.

FINDINGS

The expression of patient anxiety was clearly established, both in conversations with patients and staff, and in observations of patient behavior in the waiting room. Patients freely admitted to companions, staff and to one another that they did not like being in a hospital, and that they wished the experience were already over. In addition, the most frequently cited sources of patient concern in the context of their admission to the hospital were as follows: 1) waiting 2) dissatisfaction with assigned accomodation 3) inadequate space 4) feeling abandoned or depersonalized ("I'm a person, not a number") 5) desire for food or coffee, but inability to leave for fear of missing one's turn 6) problem with Waiting Room B, e.g. afraid won't hear name being called, and 7) lack of information and uncertainty about where and how to register.

Naturally, not all these issues can be dealt with in the scope of one project; however, those problem areas which seemed particularly troublesome and amenable to modification were examined in greater detail and their relevance to certain theoretical perspectives were explored.

The four major categories which will be addressed in the present paper are: 1) the wait 2) inadequate space; crowding and density 3) feelings of abandonment and the reception functions of admitting 4) lack of procedural and environmental information. Each of these components of admitting at Park Hospital provoked negative emotional responses from patients. Indeed, because of their role in exacerbating the discomfort which patients normally experience when checking into a hospital, they may be regarded as iatrogenic, since the adverse

reactions observed among patients can be seen as a direct consequence of their exposure to the treatment environment.

1) THE WAIT

Observations showed that the greatest number of questions addressed to personnel concerned the expected waiting time. Complaints about waiting for medical treatment in hospital and clinical settings have been noted by many researchers (Adler et al., 1970; Fisher, 1973; Goldwater, 1947; Kirsners & Waters, 1972). In fact, the results of a national survey indicated that one of the chief sources of dissatisfaction with medical-care delivery systems was the waiting time (Anderson, Kravitz & Anderson, 1971).

The average wait of those patients who were tracked was ninety-eight minutes, with a range of one to two hours. However, in the course of observations over a six-month period, waits of three to five hours were noted, and some patients were said to have waited up to eight hours. Breaking down the overall waiting time to assess the average duration of each procedure, it was found that the procedures themselves were usually quite brief in duration: ten minutes for an interview, five to fifteen minutes for testing and five to ten minutes to get to the room. What inflated the total time were the in-between waiting periods, e.g. forty-minute wait for an admitting interview, fifteen-minute wait for tests, and twenty-five-minute wait for transport (by wheelchair) or escort.

How do people fill the time which is regarded as "dead" time, i.e. useless and unproductive, in between procedures? Observations show that the majority of patients bring someone (a family member or friend) to keep them company for at least part of the admissions process. The most frequently observed activity in the waiting areas was talking, usually among dyads or triads who had arrived together, al-

though stranger interactions were also noted. Although the fixed-feature, non-flexible seating arrangements in the Admitting reception area were poorly suited to the types of social groupings and interactions which occurred, conversations did take place, often from uncomfortable angles.

The second most popular activity was reading. Sometimes, there were magazines (often out-of-date) for patients to read, but many patients brought their own reading material, such as newspapers, with them. The emotional climate and physical set-up of admissions, however, were not readily conducive to long and private conversations or engrossing reading, since both activities were frequently interrupted by the traffic of people and wheelchairs across the waiting area, by patients' listening for their name to be called or inquiring about the delay, and occasionally by children's activities or a baby's crying. A feeling of restless anticipation was therefore pervasive, and talking and reading could not be sustained over a long period of time.

Event-sampling observations showed that patient anger or distress concerning the wait was often due to the perception that waiting time was inequitably distributed. The tracking of several patients proved this perception to be quite accurate: incoming patients were not always admitted in the order of their arrival, as per expectation. In fact, the likelihood of a long or short wait hinged on specific factors over which admitting staff generally had no control and of which patients were usually unaware.

Experts in Queuing theory, a branch of applied mathematics which deals with problems of congestion in customer service systems, have

studied the waiting lines generated by hospitals and are aware of the emctional hardships they can create (Panico, 1969). To reduce chaos, they suggested that hospitals schedule arrival times at spaced intervals for each patient. This is the strategy used by Park Hospital when they contact patients the evening before their scheduled admission and assign an arrival time which is almost arbitrary but falls within certain rough guidelines, e.g. surgery patients must be in the hospital by 5 p.m. if they are to be operated on the following morning.

This strategy is not always effective in alleviating the congestion of the Admitting area, however, because even if patients arrive at their designated time, their bed may not yet be ready, which may require a wait. Bed assignment is made on the basis of sex and the physician's service, e.g. Neurology patients are all on the same floor. When a new patient checks in to the hospital, the admitting staff must ascertain whether the bed on the appropriate floor has been vacated by its previous occupant. If not, alternative arrangements must be made for the patient. Even if the bed is empty, it may still have to be cleaned, which requires notification of the housekeeping staff and often several follow-up calls to make sure the bed and its surrounding area have been sterilized. Thus, the process of bed verification can be a demanding and time-consuming process for front-desk admitting personnel.

Furthermore, the assignment of arrival times to patients may produce more distress than it was intended to eliminate. Patients were especially upset about waiting when they had been asked to arrive at a particular time. By designating a specific check-in time for each patient, the hospital may have unwittingly raised patients' expectations about being admitted at that time.

Since patients generally had no knowledge of the difficulties involved in securing a bed, many failed to understand why others who arrived later than they did were taken for an interview sooner. They mistakenly assumed that they had been forgotten by check-in staff or that others were perhaps receiving special treatment. It is true of almost all queuing situations that there are some people who have "preemptive priority", i.e. they will be taken immediately or before others who have been waiting longer (Cox & Smith, 1974). In a hospital, the reason would be that a patient is very ill or very important (a V.I.P.). These priority occurrences are quite unusual, however, since very sick patients usually go directly to the Emergency Room and VIP admissions are infrequent. The perceived injustice or the violation of first-come, first-served expectations often prompted patients to make inquiries at the front-desk concerning the length of their wait.

Interviews with patients selected at random showed that their reactions to waiting in many cases were a function of their previous hospitalization experiences. If they had been hospitalized at Park Hospital before the newly-centralized testing area was completed, invariably they were pleased with the average twenty-five minutes shaved off their admission time, but also clearly expected to wait. If patients had been to other hospitals where waiting times were shorter, however, they were extremely dissatisfied. A few patients cited the trade-off of personal needs for superior medical treatment in a hospital of this stature. Those patients who had received a pre-admission questionnaire in the mail (roughly half of the patients in the waiting room) were informed in the accompanying letter that the average wait is 1½ hours, so they were presumably forewarned. Not all patients remembered this informa-

tion, however; while others were pre-admitted by phone and had not been informed of the expected wait.

What is the impact of a long wait on the patient who expects to be admitted to hospital imminently? Some researchers have pointed out that waiting in hospital settings can reinforce patients' feelings of helplessness and loss of control and thus may have deleterious effects on their medical condition (Kirsners & Waters, 1972). Symbolically, the need to wait for another is often regarded as evidence of status asymetry: it is generally the higher-status person who keeps the lower-status person waiting, thus signifying that the latter's time is less valuable (Henley, 1977). Although this type of waiting situation is familiar to people of all socioeconomic strata, whether they wait in a private physician's office or in a welfare or unemployment office, there is little doubt that poor people are more often subjected to the discomfort of long waits, particularly in urban environments. Of key importance in this context, however, is that patients may interpret having to wait as a sign of the hospital's indifference to their welfare.

Letters of complaint from patients showed that perceptions of waiting time are not always veridical. When checked against records kept by the patient-flow coordinator, time estimates tended to be exaggerated, either for effect or because other elements in the situation, e.g. inadequate space, impersonal treatment and emotional vulnerability, made the wait appear more prolonged ("It seems longer when you sit there." Mr. B., Jan., 1979). Several patients claimed, for example, that long waits in overcrowded rooms had a damaging emotional impact, and indicated that they had felt abandoned or ignored by the staff. The following excerpts from a patient letter describing a particularly stress-

ful admission, summarized some of the worst elements of the situation with regard to waiting and the role of the physical environment in undermining institutional trust:

> "Confusion and disappointment and unnecessary anxiety best describe my experiences with this department...After waiting 2 hours, 15 minutes on a ledge in the open lobby because the waiting room was full...hardly a relaxing atmosphere, I was ready to call the whole thing off and go home just as they got to my name. My building apprehension was heightened by the long walk through the endless basement corridors to reach X Pavilion. The dismal surroundings of that walk following directly upon the welface clinic atmosphere of the Admissions office, did nothing to build my confidence in Park Hospital. What an unfortunate introduction to a hospital you've entrusted with your life." (Mrs. Y, June, 1978)

Thus, the agony of waiting can be exacerbated by overcrowded conditions and depressing surroundings. The problem of inadequate space and the congestion which results from a surfeit of patients and companions in the waiting room of the Admitting office will be explored in the next section.

2) INADEQUATE SPACE, CROWDING and DENSITY

The second paragraph of a book written by a Missouri physician to prepare patients for hospitalization states: "When you arrive at the hospital, don't be surprised if you find all incoming patients herded together in a warm and colorless admitting room, waiting their turns to register." (Graham, 1968, p. 3) The physical features of the environment coupled with the congestion of arriving patients can create an atmosphere of discomfort, depression and anxiety. Both environmental issues will be dealt with below, beginning with the properties of the physical setting which affect patients as they wait to be admitted to the hospital.

Although little work has been done on the environment of admissions per se, settings which are similar, such as outpatient clinics, have been studied and patient needs and preferences have been studied and patient needs and preferences have been identified. Such environmental variables as size, density, noise, lighting, ventilation, privacy, seating arrangements and overall appearance have been cited in the literature as being crucial to the comfort and well-being of waiting patients (e.g. Forsyth & Logan, 1968; Kirsners, 1975; McLaughlin, 1975). Many of the findings were obvious: small waiting areas and fixed seating arrangements, for example, were found to be distasteful to respondents in a variety of waiting room settings (McLaughlin, 1975; Sommer, 1974), and satisfaction with clinic care was in some instances shown to vary with waiting time and seating comfort (Alpert et al., 1970; Fisher, 1973). People waiting in hospitals voiced a preference for warm, cheerful settings and were distressed by the deteriorated furniture they encountered in waiting areas and by the "hard" look of

most hospital interiors, which is usually due to the use of low-maintenance materials in both public and private areas (Kirsners, 1975; McLaughlin, 1975). Respondents also stressed the importance of access to amenities, such as restrooms, telephones, food and drinking fountains (Forsyth & Logan, 1968; McLaughlin, 1975).

Specialists in outpatient care maintain: "While agreeable surroundings do not assume excellence of care, they do raise the morale of the patient as well as the hospital staff." (Outpatient Health Care, 1968, p. 18). What is perhaps most important about the appearance of the physical environment is that it often reflects the regard in which a particular department and its clients are held by the rest of the hospital.

Just as a dilapidated waiting area can signify the hospital's indifference to the needs of its user population, so an over-crowded admitting office can convey a similar lack of concern on the part of the hospital for patients' comfort and well-being. Observations revealed that between the hours of 1:00 and 5:00 p.m., the number of people in the main waiting room--Room A--frequently exceeded the available seating capacity, leaving an average of two to eight people standing in the waiting room or outside in the lobby, where the only seat was a covered radiator. The overflow waiting room, Room B, also tended to fill up during these periods. Since Waiting Room B was also the Smoking room, non-smokers generally elected to wait in the lobby.

It is important to differentiate between density, or the number of people present in a given environment, and the experience of crowding, which is a subjectively determined negative response to high-density conditions (Stokols, 1976). There are a number of factors which con-

tribute to the labeling of a situation as crowded or uncrowded. The fixed or semi-fixed features of an environment can lead people to form an impression of spaciousness or congestion. For example, while the perception of spatial inadequacy can be induced by the size of a room, the arrangement of its interior space may contribute to an even more intense feeling of congestion and confinement (Rivlin, 1978). Also, the effects of physical density may be exacerbated by qualities of the thermal environment, such as temperature, humidity and ventilation, as Griffit and Veitch (1971) found when they observed group relations deteriorate as a consequence of increased temperature as well as density. When large numbers of people congregate in one location, the capacities of all parts of the system, including space, seating, fresh air, toilets, etc. are taxed. Perceived resource scarcity may heighten feelings of crowding, and the way people cope with these feelings may be influenced by such factors as the physical lay-out of the setting and the extent to which its interior arrangements support withdrawal or social interaction (Karlin et al., 1978; Sommer, 1974; Stokols, 1976). Increased ambient noise and decreased opportunities for privacy in the physical environment can also exacerbate perceptions of crowding and loss of control among setting occupants (Kirsners, 1975; Proshansky et al., 1970).

In addition, social and normative variables can affect the way in which a given situation is perceived and labeled. Studies have shown that people in high-density environments tend to feel less favorably disposed to others in the same condition (Saegert, Mackintosh & West, 1975; Sundstrom, 1975). However, as will be seen shortly, it is not just the numbers of people present in the immediate environment that

determine situational reactions, but also the characteristics of these people, their behavior and reasons for being in the setting (Altman, 1975). Furthermore, previous experiences with and expectations of crowding can shape responses to the congestion encountered in a hospital admitting office. Research on the effects of long-term density indicate that the abdication of choice and social involvement are likely consequences of residential high-density (Rodin, 1976; Valins & Baum, 1973; McCarthy & Saegert, 1979). There is also evidence that anticipated short-term density will elicit certain coping mechanisms, such as social withdrawal and increased territoriality, which enable participants to function better in a particular setting (Baum & Greenberg, 1974; Langer & Saegert, 1977). The companions that patients bring with them may facilitate coping by serving as a "social buffer" to protect patients from a potentially overwhelming situation (Saegert, 1978).

In analyzing behavioral responses (either directly solicited or observed) to the physical space and density of the waiting area, several interesting findings emerged. Predictably, expressions of distress, confusion and hostility tended to increase during periods of high density, when patient backlogs prolonged average waiting time. However, despite patients' annoyance with the length of time spent in admission under these conditions, relatively little resentment was directed toward the physical environment, personnel or other patients, contrary to what might be expected in an under-staffed, spatially restricted and socially dense situation (cf. McGrew, 1970; Stokols, 1976; Wicker & Kirmeyer, 1975). Although a number of patients felt they were ignored by hospital personnel, few encountered rudeness or

hostility in specific staff members. In fact, patients' general perception of staff tended to be favorable, accounting for most of the positive letters and verbal compliments received. Most patients found the over-all physical environment (apart from Waiting Room B) acceptable, if not cheerful, complaining primarily about the lack of seats and, to a lesser extent, about the temperature in the main waiting area.

When asked, or moved spontaneously, to comment on other patients, descriptions were invariably sympathetic, e.g. "they look friendly", "frightened", "sick"; "I feel sorry for them; they've been waiting a long time", etc. These attitudes differed from the responses found in other studies where increased social density tended to foster greater interpersonal resentment (e.g. Baum & Greenberg, 1975; McGrew, 1970; Saegert et al., 1975). Although social desirability provides one possible explanation for these responses, the failure of patients to verbalize negative feelings towards one another may also be due to the bond formed by patients in hospitals (Kirsners & Water, 1972) which unites them in empathy over their shared predicament. This group spirit may prevent them from seeing others as a threat to their space or place in line. Moreover, the presence of others who are undergoing a similar ordeal may actually mitigate the perceived stressfulness of the situation for patients, as Schachter's (1959) studies of fear and affiliation would predict. Research showing that perceived attitudinal similarity (Stokols, 1976) and group cohesiveness (Baum et al., 1975) can reduce feelings of crowding supports this line of thinking.

Also, feelings of interpersonal hostility in a high-density setting are likely to be affected by attributions of intentionality. In his crowding model, Stokols (1976) differentiated between "personal

thwarting", or the perception that our social and spatial expectations have been deliberately violated, and "neutral thwarting", when interferences by others are regarded as unintentional and, consequently, are experienced as less stressful. Applying Stokols' distinction to the admitting context, then, one might expect attributions of non-intentionality, or neutral thwarting, to characterize patients' perceptions of one another, since most people do not choose to be in a hospital as they would choose to go to a movie, for example, but are in the situation for compelling medical reasons.

If neither the physical setting, the staff, nor the other patients were the primary focus of patient anger, what served as the target of patient hostility? Those patients who expressed annoyance tended to blame "The Hospital", which was regarded as an amorphous, remote entity, often arbitrary and insensitive, to which patients had little direct recourse other than to threaten taking their case to a higher authority in the institution ("Tomorrow I'm calling the Chief administrator. They should remember they're dealing with human beings").

In summary, patients feeling angry or resentful about the inadequate seating or long waits were less likely to transfer their negative feelings to other patients (who could not help being there), to their companions (who served a social support function) or even to staff (who seemed either too powerless or too instrumental to risk confronting). Displacement of aggression onto the <u>hospital</u> would seem appropriate under these circumstances, since the institution represents a more distant and, therefore, safer target for patients.

What are the consequences of increased social density in the Admitting office for patient behavior? The stimulus overload model of

crowding posits an inverse relation between density and cognitive functioning. According to this theory, excessive stimulation from the physical and social environment can tax the individual's cognitive capacities and jeopardize task performance. Saegert (1978) attributes the performance decrements of people in high-density conditions to the strain of rapid information-processing and conflicting attentional demands posed by social overload situations. Increased numbers of strangers in the immediate environment make social encounters more difficult to predict and control and thus can increase anxiety and interfere with goal-oriented behavior (Love & Saegert, 1978; Saegert, 1978; Stokols, 1976). Evidence for the negative effects of social density on task execution and emotional satisfaction has been elicited in a variety of settings, e.g. stores, supermarkets, train stations, and thus further corroborates the overload perspective (Langer & Saegert, 1977; Love & Saegert, 1978; Saegert et al., 1975).

What are the implications of these findings for hospital admitting? While demands made on patients awaiting admissions may not fit the conventions of a formal task assignment, the nature of the setting (a complex, frequently congested and often unknown environment), the number and type of procedures and stranger interactions involved, and the physical and emotional state of patients require them to mobilize the same kinds of skills (attentional, information-seeking and problem-solving) as those elicited in studies of density and task performance. The fact that several admitting officers commented on patients' tendency to forget simple information, such as their birthdate or telephone number during their admitting interview, suggests that there is a link between stimulus overload, stress and impaired cognitive func-

tioning.

Saegert concludes that a "crisis in personal control, both cognitive and behavioral," underlies the negative consequences of density (Saegert, 1978, p. 269). This crisis is undoubtedly accentuated in a context where the surrender of bodily and informational privacy is imminent. The frequency with which patients sought information from front-desk personnel during periods of high density may signify that patients are more concerned about losing their identity and being forgotten by the hospital in situations of social congestion. This concern and its relationship to admitting functions will be discussed in the next section.

3) FEELING ABANDONED: The Reception Function of Admitting

As previously stated, the sheer numbers of people with whom the incoming patient must deal upon admission to the hospital is sufficient to compound the stress and confusion engendered by illness and intensified by congestion within the physical milieu. Not only does a patient sit in the waiting room with a group of strangers (other patients and their companions), but the variety of procedures to which patients must submit make it necessary to deal with a number of different staff members, who are often anonymous, but to whom patients must be willing to surrender bodily and informational control. The quality of personal attention which makes the small hospital so desirable is eroded in a large medical setting as the number of personnel with whom patients interact increases.

Although the specialization of functions typical of large metropolitan hospitals can produce more competent treatment, one if its negative consequences is the fragmentation of patient care which generally results (Barnes, 1961). The more people involved in treating the patient, the greater the diffusion of responsibility for the individual patient; hence, the reports of alienation and depersonalization found in patient accounts of their hospitalization (Barnes, 1961; Kirsners & Waters, 1972).

The fear of abandonment which may result from long waits under high-density conditions can intensify feelings of helplessness and trigger emotional and behavioral regression (Brown, 1965), thus heightening the psychological trauma of admissions. Psychoanalytic observations on illness and hospitalization note the tendency of patients to regress and become dependent on authority figures in the immediate en-

vironment for reassurance and support (Janis, 1958).

Since patients are particularly vulnerable to staff treatment and sensitive to their physical surroundings, it is important that they be greeted upon arrival at the hospital and made to feel welcome and secure by staff members and hospital representatives so that a feeling of institutional trust is fostered at the outset. After all, the word hospital derives from the Latin word for hospitable—one who receives guests or strangers warmly. Research has shown, however, that hospitals often do not create a welcoming atmosphere for their visitors. For this reason, several researchers have suggested that a receptionist or host/hostess be present to guide patients through the admitting procedure, explaining what will happen at each stage and even taking patients to the floor afterwards to introduce them to staff and other patients (Brown, 1965; Goldwater, 1947; Kirsners & Waters, 1972). Since admitting personnel are usually hired on the basis of their clerical rather than interpersonal skills, and since hospital functions have become increasingly specialized, the presence of a human relations specialist or patient advocate attached solely to admitting would, in all likelihood, be of value to patients in easing them through a difficult transition. However, it is rare that a hospital, particularly a large one, hires someone for this specific purpose. In some cases, volunteers assume the function of official hospital greeter and can be quite effective in this role. The major drawbacks are that their knowledge of hospital routines is often limited, and there are usually insufficient numbers of them to provide continuous coverage.

There is little doubt that a crucial socio-environmental function of admitting is to receive patients into the hospital. Indeed, the room

where patients wait to be admitted is often designated the reception area, which might raise patient expections about being comfortable and well-treated there. Yet, as Brown (1965) points out, frequently the symbols of hospitality, e.g. a friendly greeting, a cup of coffee or a cheerfully decorated room with ample space for patients and their companions, are lacking. In their analysis of the temporal and spatial patterns of an obstetrics ward, Rosengren & DeVault (1970) described the maternity admitting office as "casual and friendly". They interpreted the absence of doors to the office as a sign of welcome to patients; however, these impressions were not corroborated by soliciting patients' views, so it is not known whether the absence of doors was perceived by users of this service as a friendly symbol or as a lack of hospital concern for privacy needs. Although overly impressionistic and therefore limited in its application, this observational study attests to the importance of examining environmental cues to ascertain the meanings they may have for patients. Along similar lines, Kirsners & Waters (1972) reported that the hospital's physical set-up contributed to the feelings of deindividuation expressed by patients. A similar view was expressed by outpatients in a clinic waiting area (Kirsners, 1975). The symbolic nature of the environment must be explored in any study of person-setting relationships, particularly when the purpose is to create a more positive experience for patients in hospitals.

The absence of a hospital representative or symbols of institutional concern in the immediate physical environment, coupled with long waits and social density, may exacerbate patient anxieties regarding abandonment by the hospital and impersonal treatment by authority figures in the setting. Frequent references made by patients to food—

whether they could go to eat or would they miss a meal due to their delayed admission—may reflect the fact that patients had to skip a meal because of their admission time or because of medical instructions, but may also be indicative of patients' insecurity about their basic needs being attended to in a congested, impersonal environment. The lack of readily visible information about amenities which patients may require can reinforce these insecurities. Since food is often symbolic of nurturance and caring, patients' preoccupation with eating may mask a deeper concern about the kind of treatment they are receiving and can expect to receive once they arrive on the floor.

It must be pointed out that staff, like patients, are bound by the form and structure of the hospital (Rosengren & DeVault, 1970), and consequently must operate within a set of constraints which are temporal, spatial, normative and psycho-social. Study groups have found that the typical hospital is obsessed with time and action (Barnes, 1961), an attitude that is bound to affect the quality and duration of patient/staff contacts. The stated purpose of hospital admissions is to process patients rapidly and efficiently and get them to their room as expeditiously as possible in order to maintain the hospital goal of full occupancy (Manager, Admitting office). Staff awareness of these time pressures is likely to result in brief, routinized interactions with patients, who, in turn, may feel that being rushed through the process is just as dehumanizing as having to wait for several hours.

Overcrowding adds to this problem. Even if staff members wanted to spend more time with patients, they know (or are reminded by their supervisor) that the longer they take with one patient, the longer

others will have to wait. Lack of adequate space, in addition to increasing patient discomfort can impair staff efficiency to the ultimate detriment of the entire system. As indicated earlier, both experimentally-induced and naturally-occurring density situations can undermine task performance and prevent goal attainment (Heller et al., 1977; Langer & Saegert, 1977; Saegert et al., 1975). On a symbolic level, when staff members observe the extent of patient overbooking and overcrowding permitted by the hospital, they realize that the number of beds to be filled is the hospital's key priority, and of less concern are the psychological needs of the patients who fill those beds.

Hospitals are chronically short of staff, and the admitting department is no exception. Understaffing places an even greater burden on existing personnel. The inability to cope with client overload may lead to fatigue, apathy, despair, even antipathy toward patients, which is part of the well-known syndrome of staff "burn-out" (Maslach, 1978; Wicker & Kirmeyer, 1975). The repetitive nature of their work makes admitting staff more susceptible to this syndrome. Also, when invasions of patient privacy become routine, it is more difficult to view that person as an individual and to be sensitive to his or her needs.

Even when staffing is not a problem, the rules and bureaucratic requirements of medical institutions can create a certain rigidity in the patient/staff relationship which can undermine mutual trust and rapport.

Another problem which is less overt, but can do much damage to the patient/staff interaction is the role played by psychological defense

mechanisms. Because of their largely unconscious nature, it is difficult to specify to what extent staff behaviors are affected by these intrapsychic processes. However, people who habitually deal with crises and death may find it necessary to defend against their own anxieties which are triggered by repeated exposure to life-threatening events (Bard, 1979; Lenrow, 1978). As a result, the admitting staff may unconsciously adopt a detached and impersonal stance toward patients, which enables them to feel protected from the threat of illness and death. Of course, the unaware patient is likely to respond to this type of treatment with hostility and/or depression.

Finally, the role of patient expectations must be cited as a possible influence on staff attitudes and behavior. Since patients at Park Hospital, like patients at most hospitals, are provided with little information about their admission or about the hospital, they are forced to rely on the front-desk staff to provide answers to a multitude of questions, ranging from directions to the restroom to more technical matters regarding their own illness. Since all Admitting interviewers and technicians wear a white coat, which in patients' minds is associated with medical expertise, patients may expect that the staff has more knowledge than they actually do, and are therefore angry and disappointed when admitting personnel cannot answer medical questions, such as whether they can eat, when their surgery will be, or what their EKG reading was.

From the standpoint of efficiency, patient questions can interfere with staff's primary function, which is to secure beds for patients and handle related problems. However, since no one else is available to explain what is going on to patients, it is up to the

front-desk staff to attempt to answer questions as clearly, succinctly and sensitively as possible.

The problems created by lack of information for both staff and patients will be further developed in the section which follows.

4) LACK OF PROCEDURAL & ENVIRONMENTAL INFORMATION

One of the major complaints concerning admissions as well as other phases of hospitalization is the lack of available information (Barnes, 1961; Forsyth & Logan, 1968; Lucente & Fleck, 1972; Kirsners & Waters, 1972). Barnes (1961) points out that everything else--the waiting, the crowded sitting rooms and inadequate facilities—becomes more tolerable once patients have some information about where they are going, what they are to do, and why.

Information reduces the fear of the unknown, which is what all patients, regardless of diagnosis or prognosis, face when they enter a hospital. Studies have shown that providing knowledge and information to people who are about to face a painful ordeal or a crowded setting can be instrumental in reducing anxiety and enhancing performance (Langer & Saegert, 1977; Staub & Kellet, 1972). Moreover, patients who received information in medical settings were able to cope more successfully with anxiety-provoking medical events (Janis, 1958; Langer et al., 1974; Volicer & Bohanen, 1975).

In observations of and interviews with patients who were being admitted to Park Hospital, it was noted that at critical points in the admitting process, information was not directly available to patients unless it was actively solicited from nearby staff members. Different kinds of information were required at different stages of the procedure, and they will be enumerated in sequence.

a) Locating the Check-in Area and Knowledge of Registration Procedures: Studies of hospital visitors have reported that the need for information and orientation is particularly salient when people first enter the hospital setting (Clipson, 1970; McLaughlin, 1975). Ob-

servations of Park Hospital patients indicated that many newcomers were confused about where to check-in and about what checking-in entailed. They would frequently ask a guard at the door or a person at the Information booth what to do, despite the fact that the Admitting Office door was directly in front of them. This reliance on hospital personnel was due to an almost total absence of cues inside the Admitting office to orient people to the Check-in window or to the front desk. If no Volunteer were present at the Check-in window or if there were no line at the front desk, prospective patients might sit and wait for up to an hour without notifying front-desk staff of their arrival. Failure to register immediately resulted in delayed admission for these patients, since the process is not started until the patient arrives in person. When asked why they waited without notifying a staff member of their arrival, patients usually replied that they assumed they were expected since the Admitting office had told them to arrive at that time. Thus, entry into the admitting environment was characterized by an absence of information and orientation cues.

Following registration, which required patients to present their insurance cards and give some information, such as their name, age, physician's name and service, patients were asked to be seated. The waiting experience which followed was again characterized by a lack of information. Generally, the types of questions or complaints which patients addressed to staff while waiting can be grouped into the following categories:

b) Questions about the Admitting Process: These questions revolved around the length of the wait, the reason for the wait, and the procedures following the wait, reflecting the extent to which even veteran patients were uninformed about the interview, testing and escort

procedures which are part of the Admitting process.

c) Questions about the Hospital: These inquiries dealt with the availability of certain hospital services for patients once they reached their rooms. Of major importance were arrangements for a telephone and television in their room, followed by arrangements for a Private-Duty nurse or for a special diet. Other general questions about the hospital, such as patients' visiting hours, were also raised.

d) Questions about desired Amenities: Many patients requested directions to the restrooms. They were also interested in locating food, coffee, telephones and a smoking lounge, since smoking was forbidden in the main waiting area (Waiting Room A) and in the lobby.

Patients who attempted to find these facilities frequently encountered difficulties as soon as they stepped outside the Admitting office, since there are no signs to guide visitors to nearby amenities. Again, patients relied on others, such as a hospital guard or anyone who looked knowledgeable, for assistance.

These requests for information posed problems for the staff because they often had to stop what they were doing to answer queries and complaints which, as indicated above, were quite repetitious in nature—although obviously of key concern to the patient in need of information.

For patients, the lack of information, coupled with the unpredictable waiting time and periodic congestion, contributed to feelings of helplessness and inadequacy. Hospitals often forget how difficult it is for outsiders to negotiate a complex institutional environment. This problem is compounded for sick people who are weak and vulnerable. The absence of verbal and visual clarification of their environment and the tasks which await them serve to increase patient confusion and

dependency on others, while conveying a message of institutional indifference to patient welfare.

It has been pointed out that simple and comprehensible aids to orientation, such as signs and maps, are conspicuously absent from most medical institutions, despite their critical importance to the navigational needs of patients and hospital visitors (Clipson, 1970). The frustration of getting lost in a strange hospital environment could not possibly be beneficial to patients who are already in a debilitated physical and emotional state. Yet, rarely did any of the patients who were observed going to the cafeteria manage to find it without asking at least two people along the way for assistance. Failure to achieve control over one's environment not only impairs self-esteem and autonomy (Proshansky et al., 1979; White, 1970), but has been linked, with repeated occurrences, to syndromes of depression, learned helplessness, mindlessness and a variety of psychosomatic ailments (Altman, 1975; Langer, 1979; Seligman, 1975). Symbolically, it is possible to interpret the lack of orientation and information cues in the admitting environment as an attempt on the hospital's part to prepare sick people for the patient role, as Parsons (1951) defined it, thus deliberately encouraging feelings of passivity, compliance and resignation in waiting patients.

Of course, not all patients wait meekly and silently in passive acceptance of their circumstances. Outbursts of anger and tears were observed, and on occasion, extremely outspoken patients were admitted immediately so that they could be removed from the waiting area and thus not "disturb" other patients. Although this strategy produced the desired effect for the "uncooperative" patient, research indi-

cates that extreme reactions of any kind to institutional influence attempts--whether they take the form of anger and reactance (the "bad" patient) or of compliance and passivity (the "good" patient)--are capable of causing physiological damage to the patient (Taylor, 1979). The psychological damage which results from a lack of information has been addressed by Janis (1958) who found that uninformed patients experienced unexpected shocks in their encounters with hospital staff and routines. These experiences served to undermine patient morale and trust in the institution, and negatively affected patients' ability to recover.

Thus, lack of information can be deleterious to patients both psychologically and physically. Although information needs may vary as a function of the patient's background and disease history (Taylor, 1970), there is mounting evidence that patients want to know more about their condition than they are told, and regard the lack of pertinent information from the hospital as detrimental to their recovery (Kirsners & Waters, 1972; Lucente & Fleck, 1972). Some of the positive effects which information can have on patient behavior have been documented. A study of patients on a progressive care unit showed that a hospital policy which promoted self-management of patient care produced significant improvements in the mobility, sociability and morale of those patients (Olsen, 1978). In addition, providing knowledge to patients has also been found to increase post-surgical tolerance (Janis, 1958) and reduce both pre- and post-operative stress (Langer et al., 1974). Also relevant to the problems of Admitting are studies which show that information can reduce perceptions of waiting time and increase satisfaction with medical care (Vieth, 1977), in

addition to reducing perceived crowding and enhancing performance and affect in high-density situations (Langer & Saegert, 1977; Wener & Kaminoff, 1979).

Cognitive Mediation of Stressful Experiences

Much has been written about the role of cognitive strategies in attenuating the effects of anxiety-provoking situations. Rational-Emotive and other cognitive-based therapies advocate using techniques such as calming self-talk, mental rehearsal, autogenic relaxation exercises and cognitive reappraisal as a means of gaining control over emotionally-threatening ideas and events (e.g. Beck, 1967; Bender, 1976; Ellis, 1962; Jacobson, 1964; Meichenbaum, 1977). Situations of crowding may pose a similar threat to the individual's cognitive and emotional functioning. Researchers have advocated the notion that perceptions of crowding under conditions of high density are due to a perceived stressful loss of control (Baum, Aiello & Calesnick, 1978; Rodin, 1976), hence the use of strategies aimed at restoring perceived control, if not actual control, to the individual in order to produce an enhancement of performance and affect (e.g. Langer, 1977; Sherrod, 1974).

The Role of Information

The potential utility of situationally relevant information in mediating patient responses to stress can now be examined in greater detail. Providing patients with knowledge about their situation introduces a strong cognitive component into the Admitting experience which may enable patients to cope more successfully with the aversive elements of waiting and social density described earlier. There are several ways in which information can facilitate coping in the context of hospital admissions, and four of these functions will now be discussed.

1) Preparatory Function

There is abundant evidence in the literature on hospitalization to support the contention that psychological preparedness enhances adjustment to stressful events and life-crisis experiences (Mechanic, 1978; Rapoport, 1965; Volicer & Bohanen, 1975). Janis (1958) maintains that advance warning about a potentially threatening event enables people to mentally rehearse the most dreaded aspects of the situation so that its ultimate impact is felt less keenly. People who are prepared for a crisis are also in a better position to choose an appropriate strategy for dealing with the situation. In Janis' study, the surgical patients who experienced the least amount of stress were those who reduced their anxiety by obtaining information about their procedure so that they knew what to expect, and were then able to reassure themselves by focusing on the competence of their surgeon. For this reason, Janis and others advocate giving patients realistic information along with pertinent reassurances so that patients can work through some of their anxieties beforehand and not be unpleasantly surprised when confronting the reality of their situation. In this way, patients can inoculate themselves emotionally against the most threatening aspects of their ordeal.

Along similar lines, a study of Manhattan shoppers indicated that prior information and reassurances from an experimenter enabled shoppers to function more effectively under both high and low density conditions. Discussing their findings, Langer & Saegert (1977) suggested that advance preparation enables people to select the appropriate cognitive and behavioral strategies for maximizing efficiency and minimizing emotional discomfort in the setting which they are about to enter.

Information can also correct exaggerated and irrational fears which

patients may be harboring. Bender's (1976) treatment of acute hospitalization anxiety stemmed from her experience with patients who were misinformed or had unrealistic fantasies about what their hospitalization would entail. She found that patients can manage their anxiety more effectively when knowledge is substituted for fantasy and misinformation, and when the anticipated sequence of events is rehearsed so that active coping behavior can begin.

2) Explanatory Function

Lazarus' (1966) work on stress has demonstrated the effectiveness of explanatory statements in reducing the emotional impact of a threatening event. He found that subjects watching a film of circumcision rites were less fearful when an accompanying soundtrack explained the context and purpose of these rituals. Similarly, research has shown that providing an explanation of the apparatus to be used on them increased pain tolerance among experimental subjects (Staub & Kellet, 1972) and reduced the anxiety of a physician's patient clientele (Brown, 1965).

Providing information to patients can also reduce perceptions of institutional arbitrariness and can help allay patients' suspicions about being overlooked or abandoned. Explanations are especially necessary in situations where people wait. For example, in contrasting the anxiety of novice clinic patients and airline passengers, Forsyth & Logan (1968) noted that although both situations are characterized by bustling activity, queues, and reactions of fear and awe to the display of advanced technology, the airline passenger is more likely to feel both comfortable and important, while the clinic patient often feels foolish and confused. This difference, they claim, is at least partly attributable to the fact that airline personnel feel obliged to

announce and explain delays to their customers, whereas hospital personnel do not feel themselves under a similar obligation to keep their patients informed. In support of this argument, Vieth (1977) found that posting a waiting list and patient priority list in a hospital Emergency room elicited positive and appreciative comments from waiting patients. Similarly, informational signs which were mounted in the lobby of a midtown correctional facility reduced visitor confusion and requests for information (Wener & Kaminoff, 1979).

3) Distraction Function

As a number of patients, researchers (e.g. Forsyth & Logan, 1968) and staff have observed, time passes more rapidly when people are occupied or feel they are making progress toward their goal. In describing her hospital admission, Betty Rollin stated: "There is a lot of work when you check into a hospital, some of which is busywork, and that's good. Busywork keeps you busy." (Rollin, 1976, p. 54).

The fact that patients were frequently observed reading or talking with companions suggests that distraction was deliberately sought to screen out anxious thoughts and/or make the time pass more quickly. There are precedents for the use of distractors in the stress and crowding literature. Kanfer & Goldfoot (1966) found that subjects who viewed slides were more tolerant of noxious stimulation and tended to underestimate their exposure time to it. Films have been presented as a diversion to Emergency Room patients (Vieth, 1977) and were found to reduce perceived waiting time (Sturmer et al., 1968). Other visual distractors, such as windows and wall-posters, were shown to reduce perceptions of crowding in experimental settings (Worchel, 1978). According to Worchel & Teddlie's (1976) two-factor theory of crowding,

if people in high-density situations can attribute their arousal to a source other than the people present, i.e. a distractor, they will feel less crowded. For this reason, the use of distractors in the design of settings with high arousal potential has been advocated (Coss, 1973; Evans, 1979).

A key component to the effectiveness of distractors is that they divert attention away from the aversive elements in a situation. In fact, the failure of some crowding researchers (e.g. Freedman et al., 1971) to find performance decrements under high-density conditions has been attributed to the distraction afforded by the task itself (Glassman et al., 1978; Saegert, 1978). The usefulness of selective attention as a coping device has been demonstrated by Langer et al. (1974) in a study of surgical patients. Those patients who were taught cognitive control exercises, i.e. were encouraged to focus on the beneficial aspects of their hospitalization, showed less stress both pre- and post-operatively. Thus, the mechanism of selective attention has been shown to effectively reduce pain, stress, perceived waiting time and perceived crowding.

4) Environmental Clarity Function

Confronting the unknown arouses in many people the need for environmental understanding and control (Proshansky et al., 1979). In situations of stress, where attentional capacities are reduced, environments must be simplified in order to be understood (Saegert, 1976). Social density can exacerbate the problems of being in a complex hospital environment under stressful conditions, since it has been shown that people construct poor environmental maps and display less incidental learning when they are in high-density situations (Saegert,

Mackintosh & West, 1975).

One means of facilitating mastery in a complex environment is to make the environment more legible through visual displays and other orientation aids. Although maps have not proved overwhelmingly effective in clarifying the environment for users (Devlin, 1973; Saegert et al., 1975), other orienting devices have been used to advantage. Color-coding was found to reduce navigational errors and increase environmental recall (Evans, et al., 1980) and posted signs have successfully aided visitors in a variety of institutional settings (Vieth, 1977; Wener & Kaminoff, 1979; Winkel, Olsen & Wheeler, 1977).

In one study, signs which displayed procedural and directional information were posted in a crowded visitors' lobby, and successfully reduced perceptions of crowding as well as confusion, discomfort and anger (Wener & Kaminoff, 1979). The researchers maintained that orienting high-density users to needed environmental information made social density less salient; hence the threat of overload was minimized and perceptions of crowding reduced. Another result of this intervention was a reduction in the number of requests for information, which was doubly beneficial in that it lightened the load of staff members, enabling them to process applications more efficiently, and decreased the reliance of users on staff members. Reduced dependency on others for assistance in managing a complex environment is also likely to increase one's sense of autonomy and self-sufficiency, which is extremely important in a hospital setting where helplessness and other forms of behavioral regression are typically encouraged.

Clear informational display provided by the hospital serves another function besides helping to reduce patient confusion and depen-

dency. It is also a symbolic indicator of institutional caring and shows a sensitivity to the needs of new arrivals which is likely to promote a feeling of well-being in the patient and a positive attitude toward the hospital.

Thus, signs and graphics have the potential of facilitating environmental mastery. They provide information from the physical setting about the physical setting which can help users form cognitive maps of their surroundings more quickly and ease their locomotion through an unfamiliar environment.

V. THE INTERVENTION

The four problems examined in the previous sections—waiting, density, perceived abandonment, and lack of information--all seemed to have an interactive effect which, both individually and collectively, intensified patient anxiety and led to increased interaction with staff. Since the latter were already under considerable pressure to find beds for patients, the increased patient contact was observed to interfere with the performance of these activities and delay admission even further.

In view of the research summarized earlier which confirms the stress-reducing qualities of information, it was hypothesized that supplying situationally-relevant information to patients would help alleviate the negative emotional and behavioral consequences of waiting, density and perceived abandonment by the hospital. Since the hospital tended to be blamed for these unsatisfactory conditions, an environmental intervention was conceived with the aim of providing procedural and environmental information from the hospital which would accomplish the following goals:

1) Reduce patient feelings of anxiety and abandonment
2) Decrease perceived density and waiting time
3) Enhance the image of the hospital
4) Decrease patient contact with staff, thus freeing the latter to concentrate on expediting patient admission.

It was decided that the optimal means of making information available to patients without relying on staff members would entail a variety of visual formats, both printed and pictorial. The specific details and functions of each part of the information system which was

envisioned will now be described:

1. Patients are greeted by a large sign, visible from outside the Admitting office, welcoming them and instructing them about registration procedures (see Figure 3).

The purpose of this sign is to make patients feel welcome and to clarify the initial check-in process.

2. After registering, patients are handed an Information packet, printed in English and in Spanish, containing:

> a. The Hospital Information Booklet which patients normally receive in their rooms, describing hospital services and policies;
>
> b. A letter of welcome from the Admitting staff and the hospital which explains admitting procedures, reasons for the wait, assurances that the patient has not been forgotten, and a description of nearby facilities (see Figure 4).

The function of this written information is to prepare patients for what lies ahead, to reassure them, and to absorb their attention, since a thorough reading of this literature might take at least half an hour.

3. Reinforcing the written information are directional signs, mounted in both Waiting Room A and B, displaying information about available amenities and their location via pictographs and arrows (see Figure 5).

> 3a. This display is supplemented by similar signs out in the lobby, and by printed "Cafeteria" signs in the basement corridors leading to the Cafeteria.

The purpose of these signs is to clarify the environment for patients so that they can navigate autonomously and reduce their reliance

on others for information and directions to needed facilities. The use of pictographs was motivated by the need to avoid excessive verbiage and to elimirate language bias, since not all patients read or understand English.

Figure 3

Signage for Experimental
INTERVENTION

SIGN #1: Instructional

Location: Above window of Admitting office

Content/Description:

WELCOME TO THE ADMITTING OFFICE

- Please:
- Check in at desk
    - por favor registrese aqui
- Present insurance cards
- Check luggage, if desired
- Have a seat--an interviewer will call you and answer your questions

Thank you

Color: Navy on White

Size of letters: 3/4 in. to 1½ in.

Figure 4

Dear Patient,

Welcome to Hospital. We hope to make your admission to the hospital as smooth and comfortable as possible. For this reason, we have provided some information for you which will explain our admitting procedures and introduce you to the hospital.

YOUR ADMISSION

Our admitting system is designed to gather all the information required by your doctor and the hospital to provide you with the best medical care. By collecting this information now, we avoid having to inconvenience you at some later date.

WHERE DO I WAIT?

As soon as you check in, take a seat either in this waiting room or the one across the hall. Our staff will look for you in both places. While you are waiting, our admitting staff is completing the necessary paperwork and finalizing arrangements on your room.

YOUR INTERVIEW

As soon as your file is ready, an interviewer will call you into one of our offices to ask you some questions. The purpose is to check information for our records and to answer any questions you may have about your admission. There will also be some forms to sign -- for insurance and, for ordering a telephone, if you wish. An identification band with your name and room location will be placed on your wrist. Finally, you will be given a card specifying your room location and visiting hours. Remember that our Admitting staff are not medically trained. They will be unable to answer questions about your medical condition, treatment and length of stay. Please save those questions for the doctors and nurses on your floor.

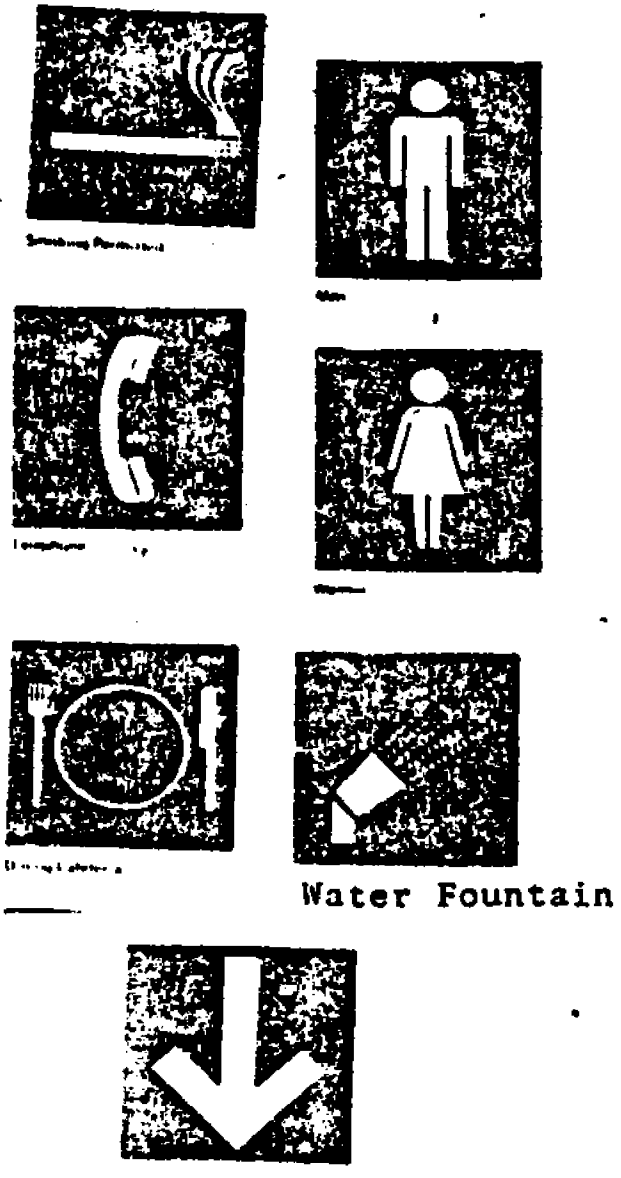
WHAT ABOUT TESTS?

For your convenience, certain routine tests are performed in our Admitting Suite. Taking the tests now will help insure that your receive prompt and efficient medical attention once you arrive on the floor. Your interviewer will tell you which tests your doctor has requested and will then escort you to the Testing Area. After your tests, you will be escorted back to the main waiting area where a bluecoated transporter will call for you to take you and your luggage to your room.

Figure 5

Directional sign

Location: Inside Admitting Office, above entry door



Size of Pictographs: 3in. x 3in.

Lettering: 2in. high

Arrow : 2-inch

Size of Sign: 2 ft. (L) x 10 in. (W)

Color: White on Navy

VI. HYPOTHESES

Predictions concerning the effects of this environmental intervention can be grouped under two major headings: 1) Direct Effects of Information, and 2) Interactive Effects of Information and Density.

Direct Effects of Information

It was expected that patients who were exposed to the informational system, i.e. the intervention, would differ from patients who received no information on key response dimensions. The dependent measures which will be examined in this comparison have been grouped into the following four categories: 1) Cognitive/Behavioral responses, 2) Evaluations of the Hospital, 3) Affect, 4) Physical Setting Evaluations, and 5) Perceived Wait. Specific hypotheses within each of these categories will now be enumerated:

1) Cognitive/Behavioral Responses

HYPOTHESIS A:

More patients in the Information group will report receiving a satisfactory amount of information about the hospital and about admitting procedures.

HYPOTHESIS B:

Patients in the Information condition will be more knowledgeable about admitting procedures than patients in the No-Information condition.

HYPOTHESIS C:

Patients receiving information will rely more on the instructional sign and less on other people for information about registration.

HYPOTHESIS D:

Patients in the Information group will report greater familiarity with nearby amenities.

HYPOTHESIS D1:

Patients exposed to the Information intervention will report greater usage of these amenities.

HYPOTHESIS E

Patients receiving information will initiate less verbal contact with staff while waiting to be admitted.

2) Evaluations of the Hospital

HYPOTHESIS A:

Patients who receive information will be more likely to report that the hospital did something to ease their wait.

HYPOTHESIS B:

Patients reveiving information will perceive the hospital as being more concerned about them.

HYPOTHESIS C:

Patients who receive information will perceive the hospital as being more prepared for them.

HYPOTHESIS D:

Patients receiving information will give a more positive overall evaluation of their admission to the hospital.

3) Affect

HYPOTHESIS A:

Patients who receive information will manifest less anxiety, which will be reflected in their slower heart rate.

HYPOTHESIS B:

Patients who receive information will report feeling more relaxed and less worried, impatient, annoyed, forgotten, crowded and confined.

4) Physical Setting Evaluations

HYPOTHESIS A:

Patients receiving information will find the room in which they waited to be more attractive, cheerful and comfortable than patients who do not receive information.

HYPOTHESIS B:

Patients who receive information will perceive the waiting room as less full of people than patients not receiving information.

5) Perceived Wait

HYPOTHESIS A:

Patients exposed to the information intervention will tend to underestimate their waiting time.

HYPOTHESIS B:

Patients in the Information condition will report that their wait seemed shorter, compared to patients in the No-Information condition.

Interactive Effects of Information & Density

The findings of density researchers summarized earlier would lead us to predict with reasonable certainty that patients waiting under high-density conditions would experience more negative affect, would evaluate the hospital and physical setting more unfavorably, and would perceive the waiting time as longer than patients in low-density conditions.

Since information has been shown to enhance affect and performance and reduce perceived crowding under high-density conditions, however, the following hypotheses are advanced:

HYPOTHESIS 1

Patients in the High-density/Information condition will express more positive affect, and will report feeling particularly less crowded and confined than will patients in the High-density/No-Information condition.

HYPOTHESIS 2

Patients in the High-density/Information condition will rate the physical setting more favorably than will patients in the High-density/No-Information condition.

HYPOTHESIS 3

Patients in the High-density/Information condition will give more positive ratings to the hospital than will patients in the No-Information/High-density condition.

HYPOTHESIS 4

Patients in the High-density/Information condition will perceive their waiting time as shorter than will their counterparts in the No-Information condition.

Furthermore, in keeping with the social overload approach, one might expect that information would be more valuable to patients in high-density conditions, where competing social stimuli create a greater need for structure and environmental clarity, than to patients in lower densities who have no such overload problems. Therefore, the following three hypotheses are proposed with reference to the Information-only conditions:

HYPOTHESIS 5

Patients in the High-density/Information condition will rate the information as being more useful to them than will patients in the Low-density/Information condition.

HYPOTHESIS 6

Patients in the High-density/Information condition will find the directional signs more helpful in guiding them to the desired amenities than will patients in the Low-density/Information condition.

HYPOTHESIS 7

Patients in the High-density/Information condition will rely more on the instructional sign than on social cues for information about registration, as compared with patients in the Low-density/Information condition.

VII. METHODS & PROCEDURES

A pre-test/post-test design was used, where the pre-test group received no information upon admission to the hospital, as is typical of Park Hospital admissions. Following the collection of data from this group, the informational signs were installed and the information packets were made available for distribution to patients by personnel. Patients who were admitted to the hospital after the instructional and informational signs had been posted and who received the information packet upon registering, were designated the post-test group.

Data for this study were collected during the fall of 1979 and early winter of 1980. A multivariate approach was taken and the following research methods were used:

1) OBSERVATIONS

Two types of observation were undertaken while the researcher was positioned behind the check-in window.

a) Time-Sampling observations were carried out at five-minute intervals in order to guarantee a random selection of study participants and to monitor the waiting location, room density and activities engaged in by these participants.

i. To avoid bias in the selection of patient participants, the researcher would look up at the end of each five-minute period and record the name of the person who was next in line to register. If that person proved to be a patient (rather than a companion), additional information, such as sex and check-in time, was recorded.

ii. Since the appearance of Waiting Room A differed noticeably from that of Waiting Room B, the room location of each participant was noted to assess the effects of different room environments on pa-

tient evaluations.

iii. The total number of room occupants was tallied so that patients' perceptions of waiting room density could be compared with actual density levels.

iv. The activities engaged in by those patients who had been selected at random were monitored for two reasons. One was to trace possible connections between patient activities while waiting (e.g. talking, reading, sleeping, eating) and patient responses to their admission. The other was to identify patients in the Information condition who were reading the information dispensed to them so that they could be sought for an interview after completing their admissions testing.(see Appendix A for Time-Sampling Observation Form).

b) Event-Sampling observations focused on two events:

i. The time at which each patient under observation was called by an Admitting interviewer, signifying that the Admission process had officially begun for that patient, was noted. The patients' check-in time was then subtracted from this time to determine the number of minutes or hours which had elapsed since the patient's arrival. This amount was later compared with patient estimates of their waiting time to assess the accuracy of these estimates.

ii. Each time any waiting patient or companion approached the check-in window to address a query or complaint to the staff member seated there, the content of this interaction was recorded as well as the time it took place. These observations were carried out to determine whether the provision of information would reduce the number of questions and complaints put forward to staff by waiting patients (see Appendix B for Event-Sampling Observation Form).

Since patient interviews made it necessary for the re-

searcher to absent herself from her observation post adjacent to the check-in window for ten to twenty minute intervals, a note was made on the observation sheet each time the researcher departed or returned to the observation site. In that way, it was possible to calculate the total amount of time the researcher was present and thus to arrive at a ratio of total number of patient-initiated contacts with staff per hour of observation.

2) Interviews

Questions in the interview schedule focused on patients' self-reported emotional state, ratings of the physical environment and density of the waiting area, evaluations of the hospital and the information supplied by the hospital, estimates of waiting time, as well as familiarity with admitting procedures and with nearby amenities. In addition, patients were asked for their responses to subsequent phases of admitting, i.e. the admitting interview, blood test, X-Ray, EKG, as well as their evaluations of staff members encountered during the process.

Finally, since their physical condition was expected to have an effect on their emotional state, patients were asked at the end of the interview to indicate the extent to which they had been experiencing worry, pain or discomfort as a consequence of their medical condition while talking to the interviewer. The preceding and other evaluations that patients were asked to make took the form of scalar ratings. The interview also contained factual questions, such as previous hospitalization experience, as well as fixed-alternative and open-ended questions. (See Appendix C for Interview schedule)

3) Census Data

This information was gathered from the files of all patients who were interviewed so that the demographic make-up of the two groups could be compared. The following patient characteristics were recorded: Sex, Race, Religion, Hospital Accomodation (Private, Semi-Private, Clinic), Medical or Surgical Unit, Physician's Service (e.g. Neurology, Cardiology), Length of stay, Marital status, City and State of residence. (See Appendix D for Census Data form)

4) EKG

An Electrocardiogram was administered to almost all patients in the admitting testing area. EKG's were later interpreted by Department supervisors or by the patient's doctor. One feature of the EKG is its delineation of the heart rate, or number of beats per minute. Since a faster heart rate may be indicative of stress and anxiety, this physiological measure of patient arousal was recorded for subsequent analysis.

5) Patient Diagnoses

Since it was anticipated that the severity of their medical problem might influence patient responses to their admission, the diagnosis of each patient was ascertained from the patient's file. A list of the diagnoses, along with each person's age and sex, was then given to two physicians—one medically-trained and the other surgically-trained--for classification into three categories. Diagnoses were ranked on a scale of increasing severity from 1 to 3, according to the following criteria:
a) how life-threatening the specific problem was judged to be, and
b) the likelihood that complications might arise, given the patient's age and sex.

PROCEDURES

Patient Selection for Observation

Prospective participants were selected at random by the researcher who was positioned behind the check-in window, next to the staff member or volunteer who took preliminary information from arriving patients.

No-Information Condition:

Every five minutes, the researcher would look up and record the name of the next patient to arrive at the check-in window. The patient's sex and social situation (whether alone or accompanied) were also noted, and a brief physical description was entered so that the patient could be identified for further observation. After this information was recorded, a count of the number of people in the waiting room was made and the activities of those patients who had been targeted for observation were recorded. The physical lay-out of the reception area obscured the researcher from view and enabled this information to be recorded unobtrusively.

Information Condition:

Patients were selected for observation in the same manner as described above. If subsequent observations at five-minute intervals showed the patient to be reading the information given to him or her at registration, that person was targeted for a subsequent interview.

Since most patients were scheduled to arrive between the hours of 1 p.m. and 4:30 p.m., observations began at approximately 12:30 and continued until 6:30 or 7:00 p.m., by which time few patients were left in the waiting area.

With the exception of holidays, patients were observed five days a

week, from Sunday through Thursday. Since Operating Rooms close on weekends, it is on Sundays - Thursdays that the majority of non-critically ill elective patients are admitted to the hospital.

Patient Selection for Interview

When the patient who had been observed in the waiting room completed the last phase of the admitting procedure and emerged from the clinical testing area, he or she was approached by the researcher, who introduced herself as a CUNY student doing a study of people's responses to their hospital admission. Patients were asked to participate in a 10-15 minute interview while waiting to be escorted to their rooms and were assured of confidentiality as well as their right to terminate the interview whenever they chose. Only six patients, or 3% of the total approached, refused to be interviewed, citing fatigue, illness, or having too much on their mind as reasons for non-participation.

An attempt was made to interview all patients who had been selected as target persons and observed in the waiting area. However, it was impossible to predict in what sequence these patients would be moved through the admitting process. For example, it was not unusual for patients who arrived an hour apart to be called in for their admitting interviews at approximately the same time. If this occurred, both were likely to finish testing at the same time, thus usually making it possible to interview only one of the patients before both were taken to their rooms.

The availability of transporters was also a determining factor in the number of interviews conducted. For obvious reasons, the researcher was loathe to delay anyone's room arrival or disrupt the transporters' work routines. Consequently, even if the interview were underway, it

was terminated as soon as the escort called the patient's name. As a result of the unpredictable nature of patient flow and staff availability, approximately 3 times as many patients were observed as interviewed.

Figure 6

Patient Flow Diagram II — depicting Intervention sequence and Activities of the Researcher

1. Patient arrives at Admitting Office [Instructional sign about Registration]
2. Registers at Check-in Window (Observation) [Receives Information Packet]
3. Waits in Waiting Room A or B (Observation) [Direction sign for Amenities]
4. Called in for Admitting interview
5. Escorted to Blood Lab
6. Escorted to Clinical Testing Area for X-Ray and EKG
7. (Patient interviewed by researcher)
8. Patient returns to waiting room
9. Patient is escorted to hospital room

KEY:

[ ] = Information available to patients

( ) = Activities of researcher

VIII. RESULTS

Part I.

Demographic Analyses: Description of sample

The total number of patients participating in the final study was 182. A demographic description follows (see Table 1 for summary statistics):

Sex and Age

The sample was 51% female (N=93) and 49% male (N=89), with a mean age of 46 and an age range of 18-84.

Race

Over three-quarters (75.8%) of the patients were White (N=138); 13% were Black (N=24), 10% were Hispanic (N=18), and 1% were Oriental (N=2).

Religion

The largest religious group represented was Jewish (39%, N=71), followed by Catholic (32%, N=58), No Religious Affiliation (17%, N=23).

Previous Hospitalization

The majority of patients (84%) had been hospitalized before. Approximately one-third had been hospitalized at Park Hospital before, half had been hospitalized elsewhere, and 16% had never been hospitalized at all.

Medical versus Surgical

The vast majority of patients were undergoing surgery (78%, N=142), while 19% were Medical patients (N=35). Five patients (3%) were in the hospital for observation and therefore could fall into either category, depending on the results of their tests. It is typical of most hospi-

tals for the bulk of elective patients to be surgical; medical cases are more likely to be Emergency admissions.

Diagnoses

Patients were ranked on a scale of 1 to 3, with "1" indicating a diagnosis of a non-serious illness, "2" indicating a diagnosis of a moderately serious illness, and "3" indicating a diagnosis of a serious illness. Since these were elective patients, the majority (53%, N=96) were judged to have non-serious problems, e.g. Ruptured Hernia, Post-Menopausal Bleeding. A smaller number (37%, N=67) were thought to have a moderately serious problem, e.g. Coronary Artery Disease, while a minority (10%, N=19) were judged as having serious, life-threatening illnesses, such as Ovarian Cancer.

Length of Wait

Patients waited an average of 52 minutes, with a range of 13-164 minutes. It was anticipated that the variability in individual waiting times could affect patient responses. Patients who waited under a half hour generally felt that their wait was a short one, while patients who waited an hour or more felt their wait was a long one. Therefore, waiting times were grouped into three categories: 1) Short wait: 30 minutes or less, 2) Moderate wait: 31-59 minutes, 3) Long wait: 60 minutes or more. A slight majority of patients (51%) fell into the Moderate wait category, while 34% had a Long wait and 15% had a Short wait.

Accommodation

The majority (67%) were Semiprivate patients (N=122) i.e. assigned to two- or four-bedded rooms; 16.5% were Private patients (N=30), as-

signed to single-bed rooms and 16.5% were Clinic patients (N=30), assigned to separate four-bedded rooms.

Table 1

Demographic Characteristics of Patient Sample

Characteristic	%	N
Sex		
Female	51	93
Male	49	89
Race		
White	75.8	138
Black	13	24
Hispanic	10	18
Oriental	1	2
Religion		
Jewish	39	71
Catholic	32	58
Protestant	13	23
No Affiliation	17	30
Accommodation		
Private	16.5	30
Semi-Private	67	122
Clinic	16.5	30
Previous Hospitalization		
At Park	34	62
Elsewhere	50	91
Never Hospitalized	16	29
Diagnoses		
Non-serious illness	53	96
Moderately-serious illness	37	67
Very serious	10	19
Medical/Surgical Service		
Medical	19	35
Surgical	78	142
Other	3	5

Table 1, continued

Characteristic	%	N
Length of wait		
Short	15	28
Moderate	51	92
Long	34	62

Table 1A

Mean Age of Information and No-Information Groups

Information	No-Information	p
44.77	47.69	.24

A. Information Group versus No-Information Group

Since the purpose of this study was to determine the effects of information on the responses of patients to their hospital admission, participants were classified according to whether they had received or had not received the information specified previously. A total of 88 patients comprised the No-Information group, while 94 patients were in the Information group.

Statistical Analyses

The two groups were compared with regard to their demographic make-up. The Chi-Square test was used to assess differences in the distribution of these patient variables.

Results

Patients in the two groups did not differ significantly with respect to age, sex, religion, race, medical-surgical distribution, diagnosis or waitlength categories (See Tables 2 and 3).

However, the groups did differ significantly in the distribution of two demographic variables: type of accomodation and previous hospitalization experience.

Accommodation: Clinic patients were not evenly distributed in the two groups. While they comprised 25% of the No-Information group, they represented only 9% of the Information group. On the other hand, Semi-private patients accounted for 56% of the No-Information group and 78% of the Information group, $\chi^2 = 11.60$, $df = 2$, $p. = .003$.

Since the number of Clinic patients in the Information group was so small ($N=8$), the clinic category was eliminated from analyses probing the joint effects of information and accommodation.

Previous Hospitalization: Patients were divided into three categories: Never Hospitalized, Hospitalized elsewhere, and Hospitalized at Park Hospital. A chi-square analysis showed a significant difference between the Information and No-Information groups in the distribution of these sub-categories. While patients who had been hospitalized previously at Park Hospital made up 44% of the No-Information group, they made up only 25% of the Information group. By the same token, there were more first-timers (Never hospitalized) in the Information group than in the No-Information group (19% versus 13% of each group respectively), $\chi^2 = 8.10$, df = 2, p = .017.

Density: Differences in the distribution of the two groups in high and low density categories approached significance.

Patients were grouped into two categories depending on the number of seats available. Higher density was defined as a situation in which the number of people present exceeded the seating capacity of the waiting area. Lower density was characterized as the condition in which there was a seat available for every person in the waiting area. Ranges and percentages for both categories were as follows:

1) Higher density: 22 - 28 people present (47%; N=76)
2) Lower density: 8 - 21 people present (54%; N=87)

A chi-square analysis showed that more patients in the Information group waited under conditions of higher density (62%) than under conditions of lower density (38%), $\chi^2 = 3.49$, df = 1, p = .06 (See Table 3 for a summary of these results).

Table 2

Distribution of Demographic Characteristics in Information and No-Information Groups, Part I

Characteristic	Information		No-Information		p
	%	N	%	N	
Sex					
Female	50	47	52.3	46	
Male	50	47	47.7	42	.87
Religion					
Jewish	41.5	39	36.4	32	
Catholic	28.7	27	35.2	31	
None	18.1	17	14.8	13	
Protestant	11.7	11	13.6	12	.72
Race					
White	79.8	75	71.6	63	
Black	10.6	10	15.9	14	
Hispanic	8.5	8	11.4	10	
Oriental	1.1	1	1.1	1	.63
Medical/Surgical					
Surgical	79.8	75	76.1	67	
Medical	17.0	16	21.6	19	
Other	3.2	3	2.3	2	.70
Diagnosis					
Non-seriously ill	54.3	51	51.2	45	
Mod-seriously ill	38.3	36	35.2	31	
Very seriously ill	7.4	7	13.6	12	.39
Length of Wait					
Short ($\leq$ 30 min.)	16	15	15	13	
Mod (31-59 min.)	45	42	57	50	
Long ($\geq$ 60 min.)	39	37	28	25	.23

Table 3

Distribution of Demographic Characteristics in Information and No-Information Groups, Part II

Characteristic	Information		No-Information		p
	%	N	%	N	
Accommodation					
Private	13.8	13	19.3	17	
Semi-Private	77.7	73	55.7	49	
Clinic	8.5	8	25	22	.003
Previous Hospitalization					
Park	24.5	23	44.3	39	
Elsewhere	56.4	53	43.2	38	
Never	19.1	18	12.5	11	.017
Density					
Lower	46	40	61.8	47	
Higher	54	47	38.2	29	.06

Part II: MULTIVARIATE ANALYSES: HYPOTHESIS-TESTING

Statistical Analysis

Quantitative interview items, i.e. scalar ratings and fixed-choice responses, were subjected to a Principal Components Factor Analysis with Varimax rotation, using an SPSS (PA1) routine (Nie et al., 1975). Items with high loadings on a particular factor were combined and indices were created. This was done to reduce the number of separate analyses of variance which had to be performed, thus diminishing the possibility of finding statistically significant results due to chance. Also, the collapsing of highly intercorrelated items to form one index helped to eliminate unnecessary duplication in the reporting of results.

Analysis of variance, in some cases with covariates, was used to determine the effects of information on patient responses.

Significant main and interaction effects were then subjected to a posteriori contrast tests, using The Scheffe Multiple Comparison test. In some instances, Least Significant Difference (LSD) and Modified Least Significant Difference (LSDMOD) tests were used, as all are exact for unequal group sizes.

Analysis of variance and covariance, chi-square, t-tests and post-hoc comparisons were executed according to the specifications of SPSS subroutines (Nie et al., 1975).

For conceptual clarity, dependent measures were divided into five categories: 1) Cognitive/Behavioral Responses, 2) Hospital Evaluations, 3) Affect, 4) Physical Setting Evaluations, and 5) Perceived Wait.

Results are reported in the order listed above. For a summary of means, see Tables 4 - 5.

1) Cognitive/Behavioral Responses

HYPOTHESIS A

More patients in the Information group will report receiving a satisfactory amount of information about the hospital and about admitting procedures.

Perception of information was operationalized in the following way: patients were asked to rate the amount of information they had received about admitting procedures and about the hospital on two separate 6-point scales, ranging from 0 (No information) to 4 (A satisfactory amount) and 5 (Too much information). Since only two patients reported receiving too much information, they were eliminated from this analysis, along with the three patients who could not answer that question.

A factor analysis indicated that both information scales were highly correlated, hence they were combined in an additive scale (from 0 to 8) and a one-way ANOVA was performed. As expected, patients in the Information group reported receiving more information than patients in the No-Information group. Means were 6.62 and .32 respectively, $F(1, 175) = 354$, $p = .0000$. A chi-square analysis of the distribution of rating responses indicated that a majority of patients (78.9%) in the Information condition regarded the amount of information they had received as satisfactory, as opposed to the majority of No-Information patients (93%), who said they had received no information, $\chi^2 = 121.10$, $df = 5$, $p = .0000$.

HYPOTHESIS B

Patients in the Information condition will be more knowledgeable about admitting procedures than patients in the No-Information condition.

Knowledge of admitting procedures was assessed by asking patients if they knew why they were waiting. Responses were coded according to the level of knowledge displayed. Patients who did not know why they waited were assigned a score of "1". Patients who cited the large number of people waiting or the fact that the staff seemed busy were assigned a score of "2", indicating a less sophisticated grasp of procedural details. Those patients who referred to specific aspects of the admitting process, e.g. the paperwork and testing involved, or the difficulties in locating a bed on the service-appropriate floor, demonstrated greater familiarity with Park Hospital's admitting procedures, and were assigned a score of "3".

Overall, 13% of the sample did not know why they were waiting, 71% gave a level-"2" response, and 16% gave a level-"3" response. Sixty-nine per cent of those who gave a sophisticated response were in the Information group. There were significantly more patients in the Information condition who gave a level-"3" response, i.e. were knowledgeable about admitting procedures, than in the No-Information condition, $F(1, 163) = 8.63$, $p = .004$.

HYPOTHESIS C

Patients in the Information group will report greater familiarity with nearby amenities.

Patient awareness of the existence of certain amenities in the immediate environment was assessed by asking respondents if they knew whether there were any restrooms, drinking fountains, telephones, cafeteria or smoking rooms in the area. Since a factor analysis revealed that these items were highly intercorrelated, they were combined additively to form an Amenities index which served as

the criterion variable in a one-way ANOVA. Results show that patients in the Information condition were significantly more aware of nearby amenities than patients in the No-Information condition, $F(1, 180) = 77.99$, $p = .0000$.

HYPOTHESIS D1: Patients exposed to the Information treatment will report greater usage of these amenities.

As a corollary of Hypothesis D, it was anticipated that usage of these facilities would increase with heightened awareness of their availability and location. However, the number of users proved negligible; consequently, the effect of this variable could not be assessed.

HYPOTHESIS E

Patients who received information will initiate less verbal contact with staff while waiting.

It was hypothesized that the knowledge acquired by patients in the Information condition regarding admitting procedures, the reasons for their wait, and the location of nearby amenities would reduce the number of questions and complaints normally addressed to staff members. The number of times staff members were approached by waiting patients or their companions in the observer's presence was recorded. This daily tally of encounters with staff was divided by the number of hours the observer was present that day, yielding a ratio of number of interactions per hour of observation, which were then averaged for each condition.

Analysis revealed that interactions with staff were significantly reduced in the Information condition. A one-tailed t-test

indicated that the number of interactions per hour were reduced by almost one-half in the Information group, $t(17) = 2.61$, $p = .009$. Observed interactions declined from an average of seven per hour, or approximately one every nine minutes, to an average of four per hour, or approximately one every fifteen minutes.

2) Hospital Evaluations

It was hypothesized that patients in the Information group would evaluate the hospital more positively than patients in the No-Information group.

Four questions in the Interview were designed to elicit feedback from patients on their impressions of the hospital's performance during their admission. Responses to these questions were anticipated in the sub-hypotheses preceding each result.

Hypothesis A: Patients who received information will be more likely to report that the hospital did something to ease their wait.

Patients were asked if the hospital had done anything to ease their wait. A one-way ANOVA of patient responses indicated that a significantly larger number of patients in the Information group reported that the hospital had done something to ease their wait, $F(1, 175) = 4.19$, $p = .042$.

Hypothesis B: Patients who received information will perceive the hospital as being more concerned about them.

Respondents were asked to rate the extent of the hospital's concern for them on a six-point scale, from 0 (Not at all) to 5 (Very much). A one-way ANOVA showed a difference between the two groups in the predicted direction which, however, was not signifi-

cant, $F(1, 158) = .76$, $p = .39$, n.s.

Hypothesis C: Patients receiving information will perceive the hospital as being more prepared for them.

Patients were asked to evaluate the hospital's preparation for them on a six-point scale. No significant differences were found between the two conditions by a one-way ANOVA, $F(1, 172) = .17$, $p = .68$, n.s.

Hypothesis D: Patients who receive information will give a more favorable overall evaluation of their admission.

Patients rated their admission on a five-point scale, ranging from 1 (Very poor) to 5 (Very good). Although the mean rating of the Information group was higher, the difference was not statistically significant, $F(1, 179) = .48$, $p = .49$, n.s.

3) Affect

It was hypothesized that patients receiving information would experience enhanced affect. Affect was assessed in two ways: by a physiological measure and by self-reported ratings on a number of scales. Specific predictions are to be found in the sub-hypotheses which precede each result.

Hypothesis A: Patients who receive information will manifest less anxiety, which will be reflected in their slower heart rate.

Patients' heart rate, or number of beats per minute, was used as a physiological measure of anxiety, with a higher number indicating a faster rate and therefore more anxiety. A one-way ANOVA revealed a significant difference between the two groups in the expected direc-

tion. The heart rate of patients in the information group was significantly slower than that of patients in the No-Information group. Means were 78.45 and 74.38 respectively, $F(1, 174) = 4.73$, $p = .031$.

To validate this measure, a three-way ANOVA was carried out, with Information, Diagnosis and Waiting Categories as independent variables. Since factor analysis demonstrated the correlation between worrying about one's medical condition and one's emotional state, self-rated concern about medical condition was used as a covariate in this analysis. Results showed a significant main effect of diagnosis, $F(2, 170) = 3.99$, $p = .020$, in addition to a main effect of information. Post-hoc comparison of subgroup means showed that patients in the most serious diagnostic category (only one of whom had primary heart disease) had significantly faster heart rates than patients in the non-serious or moderately-serious categories (Scheffe, $p < .05$).

Hypothesis B: Patients who receive information will report feeling more relaxed, less worried, impatient, annoyed, forgotten, crowded and confined.

Self-reported affect was measured by seven 6-point rating scales, with higher numbers indicating a stronger feeling or response. High factor loadings enabled the researcher to collapse the seven scales into four indices.

WORRIED, RELAXED: A one-way ANOVA yielded no significant results on either of these variables. There were no significant differences between the two groups with respect to how worried they were, $F(1, 180) = .46$, $p = .50$, or how relaxed they felt, $F(1,180) = .11$, $p = .75$, n.s.

IMPATIENT, ANNOYED, FORGOTTEN: Since these three variables were found to cluster together when factor-analyzed, they were combined and analyzed as a unit. A one-way ANOVA failed to detect any significant differences between the two groups with respect to this variable, $F(1, 179) = .017$, $p = .90$, n.s.

CROWDED, CONFINED: Since these two dependent measures were shown by factor-analytic technique to be intercorrelated, they were combined to form an index. Results of a one-way ANOVA showed no significant differences due to information on this combined variable, $F(1, 178) = .48$, $p = .49$, n.s.

4) Physical Setting Evaluations

It was hypothesized that patients in the Information condition would rate the physical environment more positively than patients in the No-Information condition.

Patients were asked to what extent they had found the room in which they waited attractive, cheerful, comfortable and full of people. Each of these four dependent variables was rated on a six-point scale ranging from 0 (Not at all) to 5 (Very much). Factor analysis showed that evaluations of the first three--attractiveness, cheerfulness, and comfort of the physical setting--were highly intercorrelated; hence they were combined to form a Room Environment index.

Hypothesis A: Patients who receive information will find the room in which they waited to be more attractive, cheerful and comfortable than patients who do not receive information.

A one-way ANOVA showed no significant differences between the two

groups with respect to physical setting ratings. Contrary to expectation, the mean rating of patients in the Information group was lower, although not significantly so, $F(1, 149) = 2.06$, $p = .15$.

Hypothesis B: Patients receiving information will perceive the waiting room as less full of people than patients not receiving information.

Patient ratings of this variable were subjected to a one-way ANOVA. The results were in the opposite direction of the prediction: patients in the Information group judged the room to be fuller than patients in the No-Information group. Although the ratings of both groups were quite high, means were 4.16 and 4.51 respectively, the difference was statistically significant, $F(1, 179) = 4.71$, $p = .03$.

In order to assess the extent to which patients' perceptions of room density matched actual density levels, mean densities recorded for each group were compared in a one-way ANOVA. Results showed that the average density of the Information condition exceeded that of the No-Information condition. Means were 21.38 and 20.50 respectively, a difference which approached significance, $F(1, 161) = 2.83$, $p = .09$.

This, coupled with a previously reported finding that more Information than non-Information patients waited under high-density conditions (see Table 3) may help explain why the room seemed fuller to patients in the Information condition, as well as less cheerful, comfortable and attractive. Further density analyses will be presented in the next section.

Table 4

Mean Self-Report Scores and Observed Interactions with Staff as a Function of Information

Measure	Information		No-Information		p
	M	SD	M	SD	
Cognitive/Behavioral					
Amount of information	6.62	2.86	.32	1.28	.000
Knowledge of procedures	2.14	.52	1.90	.54	.004
Reliance on others for registration	1.32	.47	1.77	.42	.000
Knowledge of amenities	3.19	2.21	.89	1.10	.000
Interactions with staff per hour	4.33	1.68	7.11	3.71	.003
Hospital Evaluations					
Eased wait	.57	.50	.41	.50	.04
Concerned	3.09	1.75	2.83	2.03	.39
Prepared	3.75	1.58	3.65	1.66	.68
Overall Evaluation	4.09	.95	3.98	1.14	.49
Affect					
Heart Rate[a]	74.38	11.77	78.45	13.08	.03
Worried	1.69	1.82	1.51	1.79	.50
Relaxed	2.63	1.63	2.72	1.82	.75
Impatient-Annoyed-Forgotten	3.52	4.22	3.60	4.23	.90
Crowded-Confined	3.38	3.53	3.04	3.05	.49

Note. Higher numbers indicate more pronounced cognitive, behavioral or affective response.

[a]Heart rate was assessed by EKG reading.

Table 5

Mean Evaluations of the Physical Setting and Perceived versus Actual Wait as a Function of Information

Measure	Information		No-Information		p
	M	SD	M	SD	
Physical Setting					
Evaluations					
Room Environment Index: Attractive-Cheerful-Comfortable	8.28	3.99	9.27	4.45	.15
Room was full	4.51	.93	4.16	1.20	.03
Actual Density	21.38		20.50		.09
Perceived Wait					
How long wait seemed	2.92	1.79	2.80	1.76	.67
Actual Wait in minutes	52.67	24.50	52.15	27.10	.89
Diiference between Estimated Wait and Actual Waiting Time	.45	17.66	-1.05	17.90	.54

Note. Higher numbers indicate greater magnitude.

5) Perceived Wait

Hypothesis A: Patients exposed to the Information treatment will tend to underestimate their waiting time.

Patients were asked to estimate how long they had waited before being called for an admitting interview. These estimates were then compared with the actual time which had elapsed from registration to admitting interview by subtracting the actual wait from the estimated wait. Patient approximations of waiting time ranged from a 60-minute underestimate to a 59-minute overestimate. More patients (57%) underestimated the wait than overestimated (40%) (overall mean = -.29, S.D. = 17.74 minutes). Approximately 54% of the patients were accurate to within ten minutes of their actual waiting time. Although it was predicted that patients in the Information group would tend to underestimate their waiting time, no significant differences were found between the two groups, $F(1, 178) = .54$, $p = .47$, n.s.

Hypothesis B: Patients in the Information condition will report that their wait seemed shorter.

Perception of waiting time was ascertained by asking patients to rate on a six-point scale how long the wait had seemed to them. Contrary to expectations, there were no significant differences between the two groups in their ratings, $F(1, 175) = .19$, $p = .67$, n.s.

Before proceeding any further, the findings reported in this section concerning the hypothesized effects of information on patient behavior will be summarized briefly.

Patients in the Information condition were more satisfied with the information they received and were more knowledgeable about admitting procedures and the existence of nearby amenities than patients in the No-Information condition. Patients with information also relied more on signs than on other people for assistance in registering, and approached the front-desk staff less often than patients with no information.

When asked to evaluate the hospital, patients who had received information felt the hospital had done something to ease their wait. Although means were in the expected direction, there were no significant differences between the two groups in how prepared or concerned they judged the hospital to be nor in the overall evaluation of their hospital admission, which was quite high for both groups.

Patients' self-reported emotional state was not improved by information, as predicted. Patients receiving information did not feel any less worried, impatient, annoyed, forgotten, crowded or confined than their counterparts who had no information. However, a physiological measure of arousal showed that the heart rate of patients in the Information condition was slower than that of patients in the No-Information condition, which may indicate a lower anxiety level in patients with information.

Contrary to expectation, patient evaluations of their waiting room—how attractive, cheerful and comfortable it was—were not affected by the information they received. Patients in the Information condition judged the room to be more full of people than did patients in the No-Information condition, but observations confirmed that density levels were often higher for patients who were admitted during the

Information phase of the study.

Finally, despite expectations that patients receiving information would underestimate their wait and perceive their waiting time as shorter than patients in the non-information condition, there were no significant differences between the groups in this regard.

A discussion of these findings together with the results which are reported in the coming section will be reserved for a later chapter.

DENSITY

To briefly review, density was measured at five-minute intervals by recording the number of people present in the waiting area where patients were being observed. A density score representing the average of these recorded observations was assigned to each patient. Group density was calculated by averaging the density scores of all patients in each condition. The mean density level for the Information group was found to be higher (21.38, S.D. = 3.34) than that of the No-Information group (20.50, S.D. = 3.32), a difference which approached significance, as reported in the previous section, $F(1,162) = 2.83$, $p = .09$. Since the Admitting office has a seating capacity of 21, the high overall mean indicates the extent to which high density conditions prevailed throughout much of the study.

Patients were grouped into two categories depending on the number of seats available. Higher density was defined as a situation in which the number of people present exceeded the seating capacity of the waiting area. Lower density was characterized as the condition in which there was a seat available for every person in the waiting area. Ranges and percentages for both categories were as follows:

1) Higher density: 22 - 28 people present (47%; N = 76)
2) Lower density: 8 - 21 people present (54%; N = 87)

DENSITY MAIN EFFECTS

Dependent measures were subjected to one-way ANOVAS to assess the effects of density on patients' reactions. Inspection of the means (see Table 6) showed that in almost all instances, the differences between the lower and higher density groups were in the expected direction, i.e. lower-density patients gave more positive responses than high-density patients. Significant results were obtained on the following four measures:

1. Hospital eased the wait

Higher-density patients were significantly less likely to report that the hospital had eased their wait, $F(1, 156) = 4.93$, $p = .027$.

2. How full the waiting room seemed

Patients in the higher-density condition rated the room as fuller than those in the low-density condition, $F(1, 160) = 6.91$, $p = .009$.

3. Estimate of wait

Patients in the higher-density condition tended to overestimate their wait; whereas patients in the low-density condition tended to underestimate their wait. Means were +3.74 and -2.47 minutes respectively, $F(1, 158) = 4.87$, $p = .028$.

4. How long the wait seemed

The waiting time seemed significantly longer to higher-density patients than to low-density patients, $F(1, 157) = 6.79$, $p = .010$.

Table 6

Mean Self-Report Scores as a Function of Density

Measure	Lower Density	Higher Density	F	df	p
Cognitive/Behavioral					
Knowledge of procedures	2.01	2.09	.66	1,145	.66
Reliance on others	1.55	1.44	1.41	1,117	.24
Knowledge of amenities	1.94	2.24	.76	1,161	.39
Hospital Evaluations					
Eased wait	.60	.42	4.93	1,156	.027
Prepared	3.91	3.47	2.94	1.153	.088
Concerned	3.14	2.81	1.03	1,141	.31
Overall evaluation	4.14	3.90	2.25	1,160	.14
Affect					
Heart Rate[a]	76.83	76.26	.08	1,155	.78
Worried	1.56	1.60	.02	1,161	.88
Relaxed	2.70	2.83	.24	1,161	.63
Impatient-Annoyed-Forgotten	3.13	4.11	2.27	1,160	.13
Crowded-Confined	3.14	3.35	.16	1,159	.69
Physical Setting Evaluations					
Room environment	9.57	8.93	.87	1,134	.35
Room was full	4.26	4.64	6.91	1,160	.009
Perceived Wait					
Under-Overestimate	-2.47	3.74	4.87	1,158	.028
How long wait seemed	2.53	3.27	6.79	1,157	.010

Note. Higher numbers indicate greater magnitude of response.

[a]Physiological measure

DENSITY X INFORMATION INTERACTION

It was hypothesized that the information and density conditions would interact in such a way that high-density patients who received information would respond more favorably on the affective and evaluative scales than high-density patients who received no information.

Two-way ANOVAS, with Information and Density as the independent variables, were carried out to test the hypotheses listed below. Results follow each hypothesis.

HYPOTHESIS 1

Patients in the High-density/Information condition will express more positive affect, and will report feeling particularly less crowded and confined than patients in the High-density/No-Information condition.

No significant interactions were found on four of the five variables measuring affect (heartrate, worried, relaxed, impatient-annoyed-forgotten index). The fifth variable, the Crowded-Confined Index, produced a significant interaction between information and density, $F(1, 155) = 6.42$, $p = .012$. A comparison of the two means in the higher-density condition revealed that patients who received information felt less crowded and confined, although the Scheffe test did not find any pair of means to be significantly different from one another (see Table 7).

HYPOTHESIS 2

Patients in the High-density/Information condition will rate the physical setting more favorably than will patients in the High-density/No-Information condition.

The Room Environment Index, reflecting patients' ratings of the attractiveness, cheerfulness and comfort of the waiting area, did not yield any significant interaction. Analysis of the remaining variable, a rating of how full the waiting room seemed to be, showed an interaction of information and density, $F(1,155) = 6.39$, $p = .013$. Lower-density patients who received no information reported that the room was significantly less full than any of the other groups (Scheffe, $p < .01$) Again comparing the higher-density groups, however, those receiving information felt the room was slightly less full than those who received no information, although the difference was not significant.

HYPOTHESIS 3

Patients in the Higher-density/Information condition will give more favorable ratings of the hospital than will patients in the No-Information/High-density condition.

Two of these dependent measures, how prepared the hospital seemed and how much the hospital had eased patients' wait, did not yield significant interactions. Patient ratings of the hospital's concern produced an interaction which approached significance, $F(1, 139) = 3.43$, $p = .066$. While a post-hoc comparison test showed no significant differences between means, patients with information in the higher-density condition rated the hospital as being more concerned than patients in that condition with no information (see Table 7).

The last variable in this category, patients' overall evaluation of their admission, revealed an interaction which approached significance, $F(1, 150) = 3.29$, $p = .072$. Here, too, patients in the higher-

density condition who received information gave a more positive evaluation than higher-density patients who received no information, but the Scheffe test was not significant.

HYPOTHESIS 4

Patients in the High-density/Information condition will perceive their waiting time as shorter than will their counterparts in the No-Information condition.

As indicated earlier, patient estimates and evaluations of their waiting time were directly affected by density level. No significant interactions were found when Information was entered as a second independent variable into the ANOVA.

To summarize, Information x Density interactions showed the expected differences between the two groups when density levels were high. Patients receiving information under higher-density conditions reported feeling less crowded and confined, saw the waiting area as less full, thought the hospital was more concerned and gave a higher overall evaluation of their admission than did patients under high-density conditions who received no information (see Table 7).

The last three hypotheses concerning information by density interactions apply only to patients who received the information.

HYPOTHESIS 5

Patients in the High-density/Information condition will rate the information as being more useful to them than will patients in the Low-density/Information condition.

Patients who received information were asked to rate on a six-point scale how useful they found this information. The overall mean rating was very high (4.38 out of 5). A one-way ANOVA showed differences between the higher and lower density categories in the predicted direction. The higher-density group rated the information as more useful to them than the lower-density group. Means were 4.52 and 4.20 respectively, a difference which approached significance, $F(1, 176) = 3.06$, $p = .084$. However, with a high overall mean, the likelihood of finding significant differences between the two groups was very small (see Table 7A).

HYPOTHESIS 6

Patients in the High-density/Information condition will find the directional signs more helpful in guiding them to the desired amenities than will patients in the Low-density/Information condition.

Patients who used the amenities pictured in the signs were asked to evaluate on a six-point scale how helpful the signs were in guiding them to their destination.

Although again the mean rating of the high-density group was higher, the differences between the two groups with regard to the sign's utility were not significant, $F(1, 13) = .78$, $p = .39$, n.s. However, the small number of patients who used the amenities (9 in the low-density and 6 in the high-density), and the high overall mean rating (4.60 out of 5) would tend to decrease the likelihood of finding significant differences in this case.

HYPOTHESIS 7

Patients in the High-density/Information condition will rely more on the instructional sign than on social cues for information about registration, compared with patients in the Low-density/Information condition.

Patients in the two groups were compared to assess whether high-density patients used the instructional sign for information about registration more than the low-density patients. A slight but insignificant difference was found between the two groups in the expected direction, $F(1,68) = .10$, $p = .75$, n.s. In other words, lower-density patients relied somewhat more on social cues for registration information than did higher-density patients.

Table 7

Mean Self-Report Scores for Density x Information Interactions

Measure	Lower Density		Higher Density		p	Scheffe
	Informed	Uninformed	Informed	Uninformed		
Crowded-Confined	3.97	2.45	3.00	3.91	.012	N.S.
Room was full	4.64	3.94	4.62	4.69	.013	.01
Hospital concerned	3.02	3.23	3.20	2.21	.066	N.S.
Overall evaluation	4.08	4.19	4.05	3.64	.072	N.S.

Table 7A

Mean Ratings of Information as a Function of Density

Measure	Lower Density	Higher Density	p
Information useful	4.20	4.52	.084
Sign helpful	4.44	4.83	.39
Relied on others for assistance	1.33	1.30	.75

Note. Higher numbers indicate greater magnitude of response.

OTHER FINDINGS

Multi-factor ANOVAS were carried out on certain dependent measures when these measures were thought to be affected by independent variables other than Information or when an interaction with Information was anticipated. Preliminary analyses, in the form of crosstabulations and breakdowns of the data, enabled the researcher to identify the following three independent variables as significant contributors to the variance of certain patient responses. These variables were:

1) Waiting category—Short, Medium, Long
2) Accommodation —Private, Semi-private
3) Religion —Jewish, Catholic, Protestant, No Religion

The variable Information was added to this group and four-way ANOVAS were carried out on specified dependent measures.

Two additional independent variables were used separately for two-way ANOVAS. These were: Previous Hospitalization (Hospitalized at Park before, Hospitalized elsewhere, Never Hospitalized) and Sex.

RESULTS OF MULTI-FACTOR ANOVAS

Dependent measures in four of the five conceptual categories were analyzed. These were: Hospital evaluations, Affect, Physical setting evaluations, and Perception of wait.

HOSPITAL EVALUATIONS

Hospital eased the wait:

When previous hospitalization was added as an independent variable in a two-way ANOVA with Information, a significant interaction effect was found, $F(5, 171) = 3.25$, $p = .008$. Comparative analysis of subgroup means revealed that those patients in the Information group who were being hospitalized for the first time were significantly more likely to feel that the hospital had eased their wait than their counterparts in the No-Information group. The former were also more likely to feel this way than patients in both groups who had been hospitalized at Park Hospital before. Patients in the No-Information condition who had been hospitalized at Park before were least likely to report that the hospital had done something to ease their wait (LSD, $p < .05$) (see Table 8).

Hospital was concerned:

A four-way ANOVA was performed which showed a significant main effect for Religion, $F(3, 131) = 4.36$, $p = .006$, and a significant Information x Accommodation interaction, $F(1, 131) = 4.39$, $p = .038$. Post-hoc comparison of subgroup means for Religion indicated that Catholic and Protestant patients felt that the hospital was more concerned about them than did Jewish patients (Scheffe, $p < .01$) (see Table 9).

A multiple comparison test of the Information x Accommodation interaction revealed that Private patients who received no information rated the hospital lowest in its concern for patients, while Private patients who received information rated the hospital highest in its concern for patients (Scheffe, $p < .05$) (see Table 10).

Hospital was prepared:

Results of a four-way ANOVA showed a significant main effect of Accommodation. Private patients reported that the hospital was more prepared than did Semi-private patients, $F(1, 143) = 5.13$, $p = .025$ (see Table 11). A significant Information x Waiting category interaction was also found, $F(2, 143) = 3.84$, $p = .024$. Post-hoc comparisons of subgroup means indicated that those patients who waited longest but received information gave significantly higher ratings to the hospital on its preparedness than did patients who waited longest but received no information. The latter gave the lowest ratings of all subgroups (LSDMOD, $p < .05$) (see Table 12).

Overall evaluation of hospital admission:

Results of a four-way ANOVA showed a significant main effect of Waiting category as well as a significant Information x Waiting category interaction, $F(2, 126) = 5.10$, $p = .007$. Comparative analysis of subgroup means for the interaction effect showed again that those patients in the Information condition who waited longest gave significantly higher ratings than their counterparts in the No-Information condition, who in turn gave the lowest evaluations of all subgroups (LSDMOD, $p < .05$) (see Table 12).

Table 8

Perceptions of the Hospital's Role in Easing Wait as a Function of Information and Previous Hospitalization

Previous Hospitalization	Information	No-Information	Post-hoc
Never hospitalized	.76	.27	
Hospitalized elsewhere	.55	.58	
Hospitalized at Park	.45	.29	$p < .05$ (LSD)

Note. Higher numbers indicate hospital did more to ease the wait.

Table 9

Mean Ratings of Hospital Concern as a Function of Religion

Measure	Jewish	Catholic	Protestant	None	Post-hoc
Hospital Concern	2.25	3.47	4.02	2.74	Scheffe $p < .01$

Note. Higher numbers indicate greater concern.

Table 10

Mean Ratings of Hospital Concern as a Function of Information and Accommodation

Measure	Private		Semi-Private		Post-hoc
	Informed	Uninformed	Informed	Uninformed	
Hospital Concern	3.55	1.31	3.00	2.93	Scheffe $p < .05$

Table 11

Mean Ratings of Hospital Preparedness as a Function of Accommodation

Measure	Private	Semi-Private	p
Hospital Prepared	4.14	3.61	.025

Table 12

Mean Ratings of Hospital Preparedness and Overall Evaluation of Admission as a Function of Information and Length of Wait

Measure	Short Wait		Moderate Wait		Long Wait	
	Informed	Uninformed	Informed	Uninformed	Informed	Uninformed
Hospital Prepared	4.32	4.15	3.66	3.94	3.63	2.76
Overall Evaluation	4.33	4.63	4.15	4.26	3.91	3.10

$p < .05$ (LSDMOD)

Note. Higher numbers indicate more favorable ratings.

AFFECT: Since the extent to which patients worried about their medical condition was found to correlate with their emotional state, self-rated concern about medical condition was used as a covariate in all multifactor ANOVAS dealing with emotional responses.

Worried, Relaxed:

A four-way ANOVA revealed a main effect of sex on both being worried and relaxed. Female self-ratings were higher on worry and lower on relaxation than male self-ratings were, $F(1, 176) = 7.68$, $p = .006$; $F(1, 176) = 4.85$, $p = .029$ respectively. In addition, a significant Sex x Information interaction was found on the variable relaxed, $F(1, 176) = 6.18$, $p = .014$. A Scheffe multiple comparison test indicated that when no information was received, males reported being more relaxed than females reported themselves to be; however, there was no significant sex difference in the Information condition (Scheffe, $p < .05$) (see Table 13).

Impatient, Annoyed, Forgotten:

Results of a four-way ANOVA showed a significant main effect of Waiting category, $F(2, 146) = 11.81$, $p = .000$, which was linear in nature, i.e. the longer patients waited, the more impatient, annoyed and forgotten they felt. A multiple comparison test confirmed that patients who waited longest felt significantly more impatient, annoyed and forgotten than those who had short or moderate waits (Scheffe, $p < .01$) (see Table 14).

Crowded, Confined:

A four-way ANOVA showed a main effect of Patient Accommodation which approached significance, $F(1, 108) = 3.60$, $p = .06$. Private patients reported feeling more crowded and confined than Semi-private patients did (see Table 15).

Table 13

Feeling Worried as a Function of Sex; Feeling Relaxed as a Function of Sex and Information

Measure	Female		Male		p
Worried	2.03		1.14		.006
	Informed	Uninformed	Informed	Uninformed	
Relaxed	2.56	2.13	2.70	3.36	$p < .05$ (Scheffe)

Table 14

Feeling Impatient-Annoyed-Forgotten as a Function of Length of Wait

Measure	Short Wait	Moderate Wait	Long Wait
Impatient-Annoyed-Forgotten	.91	2.88	5.80

$p < .01$ (Scheffe)

Table 15

Feeling Crowded-Confined as a Function of Accommodation

Measure	Private	Semi-Private	p
Crowded-Confined	4.15	3.23	.06

Note. Higher numbers indicate greater evidence of that feeling.

Physical Setting Ratings

How attractive, cheerful and comfortable the room seemed:

A significant main effect of Religion was found when a four-way ANOVA was performed, $F(3, 123) = 4.50$, $p = .005$. The Scheffe test showed that Catholic and Protestant patients gave more favorable evaluations of the physical environment than did Jewish patients (Scheffe, $p < .01$) (see Table 16).

Waiting Rooms: A, B and Lobby

Ninety per cent of all incoming patients ($N=164$) spent most of their time in Waiting Room A, while ten per cent waited either in Waitihg Room B ($N=16$) or in the Lobby ($N=2$). There were no significant differences between the Information and No-Information groups regarding where they waited.

Since the appearance of Room B was quite shabby, as described earlier, it was expected that patients who waited there would rate the Room Environment more negatively. A one-way ANOVA showed that the mean rating by patients in Room B of their physical environment was significantly lower (more negative) than that of patients who waited in Room A. Means were 4.27 and 9.25 respectively, $F(1, 149) = 21.30$, $p = .0000$. However, the pronounced numerical imbalance between the two groups ($N=15$ v. 136) may render the findings somewhat less reliable than others (see Table 17).

Perceptions of Time

How long the wait seemed:

A four-way ANOVA showed a significant linear main effect of Waiting category, $F(2, 146) = 11.81$, $p = .000$. Not surprisingly, patients in the longest-wait category reported that the wait seemed longer to them than patients in the short or intermediate wait categories (Scheffe, $p < .01$) (see Table 18).

Table 16

Evaluation of Room Environment as a Function of Religion

Measure	Jewish	Catholic	Protestant	None	Post-hoc
Room Environment	6.77	9.94	11.12	8.63	Scheffe $p < .01$

Note. Higher numbers indicate more favorable rating.

Table 17

Evaluation of Room Environment as a Function of Waiting Room

Measure	Room A	Room B	p
Room Environment	9.25	4.27	.000

Table 18

Perceived Wait as a Function of Actual Waiting Time

Measure	Short Wait	Moderate Wait	Long Wait	Post-hoc
Wait seemed	1.80	2.65	3.63	Scheffe $p < .01$

Note. Higher numbers indicate longer perceived wait.

SUMMARY

Table 19 summarizes the findings reported in this section. Seven of the eighteen hypotheses regarding the direct effects of information on patient responses were confirmed. In the case of four additional dependent measures, although no main effect for Information was found, the significant interactions with Information which emerged demonstrated the effectiveness of information in certain patient categories, e.g. for Private patients and for patients in the long wait category. The practical and theoretical implications of these findings will be discussed in a subsequent chapter.

Those independent variables which accounted for most of the variance in patient responses (with the exception of Information) were: Density, Waiting category, Patient Accommodation and Religion. Following the elimination of Clinic patients from analyses involving information because of their small representation in the Information condition (see Table 3), the distribution of religious groups in the two remaining accommodation categories—Private and Semi-private—was examined.

Results of a chi-square test showed that Jewish patients constituted a majority of both Private and Semi-private patients, but far outweighed the other religious groups in the Private patient category, $\chi^2 = 13.93$, $df = 3$, $p = .003$) (see Table 20). Thus, the findings that Jewish patients and Private patients were both more critical of certain aspects of their admission (see Tables 21-22) probably reflect the preponderance of Jewish patients in the Private category. The interaction of Religion and Accommodation points to the likelihood that the underlying variable being tapped in these responses is social

class and the type of expectations which people of a higher socio-economic bracket have regarding their treatment in general and at Park Hospital in particular. This issue will be explored in greater depth in the Discussion section which follows the Results.

Table 19

Summary Table

Predictions[a]	Hypothesis[b] Confirmed	Other Independent Variables Main Effects	Interactions
Cognitive/Behavioral			
More satisfied with info	X		
Knew about procedures	X		
Knew about amenities	X		
Used signs to register	X		
Approached staff less	X		
Hospital Evaluations			
Park eased wait	X	Density	Previously Hospitalized
Park was concerned		Religion	Accommodation
Park was prepared		Accommodation	Length of Wait
Higher overall evaluation			Length of Wait
Affect			
Slower Heart rate	X		
Less worried		Sex	
More relaxed			Sex
Less impatient-annoyed-forgotten		Length of Wait	
Less crowded-confined		Accommodation	Density
Physical Setting			
Room less full			Density
Room more attractive-cheerful-Comfortable		Religion	
Perceived Wait			
Underestimated wait		Density	
Wait seemed shorter		Density, Length of Wait	

[a]Predictions about responses of informed patients

[b]Hypothesis concerning direct effects of information

Table 20

Frequency Distribution: Accommodation x Religion

Accommodation	Jewish	Catholic	Protestant	None
Private	73.3%	13.3%	3.3%	10.1%
Semi-Private	36.1%	28.7%	15.6%	19.7%

$\chi^2 = 13.93$, df = 3, p = .003

Note. Numbers in cells are row percentages.

Table 21

Means for Religion Main Effects

Measure	Jewish	Catholic	Protestant	None	Post-hoc (Scheffe)
Hospital Concern	2.25	3.47	4.02	2.74	$p < .01$
Room Environment	6.77	9.94	11.12	8.63	$p < .01$

Note. Higher numbers indicate more favorable ratings.

Table 22

Means for Accommodation Main Effects and Information Interaction

Measure	Private		Semi-Private		
Hospital prepared	4.14		3.61		
Crowded-confined	4.15		3.23		
	Informed	Uninformed	Informed	Uninformed	Scheffe
Hospital concern	3.55	1.31	3.00	2.93	$p < .05$

Note. Higher numbers indicate stronger response.

EVALUATION OF ADMITTING PROCEDURES & STAFF TREATMENT

The focus of this study concerned the impact of information on patients as they waited to be admitted to the hospital. In order to understand the total experience of admitting, patients' reactions to subsequent phases of the process were solicited. What follows is a brief review of the procedures which most elective patients undergo as part of their admission, along with pertinent descriptive statistics. Later sections deal with patient evaluations of the staff and an assessment by patients in the Information condition of the information they received.

A. Procedures

After patients' names are called by admitting personnel, they are ushered into a cubicle inside the admitting office and interviewed by an admitting clerk. Following their interview, they are escorted across the hall to the Blood Lab for a blood test. All patients in the sample had both an admitting interview and a blood test.

After blood is drawn, the majority of patients are taken back across the hall to the Clinical Testing area where X-Rays and Electrocardiograms are given. Since X-Rays are not required of all patients, (e.g. those under 40 and those who brought recent X-Rays with them), a number of patients bypass this 5-minute procedure, which is the briefest in duration of all the admitting procedures. In all, 71.4% of the sample had an X-Ray taken (N=130) and 97.3% had an Electrocardiogram (EKG) (N=177). There were no significant differences between the Information and No-Information groups regarding the proportion of pa-

tients who were X-Rayed, $\chi^2 = .04$, df = 1, p = .83, n.s., or given an EKG, $\chi^2 = .96$, df = 1, p = .33, n.s.

B. Staff Treatment

Patients were asked to evaluate the clerical staff and the technicians in the testing area. Their responses were sorted into three categories: positive, negative and neutral. Overall, patient ratings of staff were very favorable. Eighty-two per cent felt they had been treated well by their admitting interviewer, 79% of those X-Rayed reported favorable treatment from the X-Ray technician, 77% said the blood technician had treated them well, and 76% of those who had an EKG spoke favorably of the way they were treated by the EKG technician.

C. Staff Ratings as a function of Condition

Since admitting personnel remained fairly constant throughout both conditions, and since ratings of staff by patients in the No-Information condition were already high, it was assumed that patient ratings of staff would not vary as a function of condition. The results confirmed this assumption, with one exception, and are reported below.

Distribution of Positive, Negative & Neutral Evaluations: When patients' ratings of their treatment by staff were analyzed according to condition, no significant differences were found with regard to their treatment by the admitting interviewer, $\chi^2 = 2.53$, df = 2, p = .28, n.s.; blood technician, $\chi^2 = .97$, df = 2, p = .68, n.s.; X-

Ray technician, $\chi^2 = 3.76$, df = 2, p = .15, n.s.; or EKG technician, $\chi^2 = 2.32$, df = 2, p = .31, n.s.

Rating Scales:

Patients were also asked to rate each staff person they had contact with on two six-point scales, one measuring efficiency, the other measuring warmth and friendliness. In the case of the person who checked them in, patients were asked to rate how busy that person seemed to be, rather than how efficient. There were no differences in the way patients in either condition rated the person who checked them in, their admitting interviewer, blood technician or X-Ray technician (see Table 23).

A significant difference between the two groups emerged, however, in response to patients' ratings of their EKG technician on the warmth and friendliness scale. Patients in the Information condition rated the EKG technician as less warm and friendly than did patients in the No-Information condition. Means were 4.05 and 4.55 respectively, $F(1, 174) = 6.61$, p = .011.

D. Assessment of Information by patients in the Information condition

1) Hospital Booklet; Letter of greeting and explanation of admitting procedures:

Patients in the Information condition were asked to evaluate the usefulness of the written information they received. Again, a six-point scale was used, with 0 meaning "not at all useful" and 5 meaning "very useful". Seventy-six per cent of the patients in this condition

reported that they found this information useful or very useful (N=94, $\bar{x}$ = 4.42, S.D. = .81).

2) Directional Sign for Amenities:

The sign on which nearby amenities appeared in pictograph form was seen by 46.8% of the patients in this condition, and not seen by 53.2%. Of those who used the facilities which were pictured on the signs, 93.3% found the signs to be very helpful in guiding them to their destination (N=15, $\bar{x}$ = 4.60, S.D. = .82).

3) Instructional Sign Explaining Registration Procedures:

Sixty-eight per cent of the patients in this condition reported using the sign explaining registration.

Retention of information: Of those who said they remembered what the sign said (N=37; 39.4%), the most frequently recalled instruction was the first line, advising patients to "check in at the desk", cited by 37% of those who remembered. Next was the instruction to "check your luggage" (cited by 23%), followed by "have a seat" (cited by 16%), "an interviewer will call you and will answer your questions" (14%), and lastly, "Present insurance cards" (11%).

Table 23

Mean Ratings of Admitting Staff and Technicians as a Function of Information

Staff Measure	Information	No-Information	p
Person who checked you in			
Busy	3.40	3.10	.26
Warm & friendly	4.20	4.20	.99
Interviewer			
Efficient	4.53	4.47	.64
Warm & friendly	4.20	4.32	.47
Blood Technician			
Efficient	4.61	4.68	.53
Warm & friendly	3.95	4.26	.14
X-Ray Technician			
Efficient	4.74	4.79	.55
Warm & friendly	4.44	4.66	.16
EKG Technician			
Efficient	4.63	4.68	.69
Warm & friendly	4.05	4.55	.01

Note. Rating scales went from 0(Not at all) to 5(Very much).

Environmental Change: The T.V. "Mini-study"

One of the problems inherent in the conduct of naturalistic field research is the inability to maintain control over all environmental variables. The latter cannot be expected to remain static in an ongoing dynamic system such as a hospital.

In the second week of data collection, during the No-Information phase, a Television set arrived unexpectedly and was installed in the waiting area of the admitting office. To assess the effects of this environmental change on patient attitudes and behavior, a small-scale comparative study was undertaken, using a pre-test/post-test design. The pre-T.V. group consisted of 36 patients, six of whom were present when the T.V. was installed but the volume was not working. The post-T.V. group consisted of 55 patients. Interview and behavioral data provided the dependent measures for investigating the possible impact of television on patient reactions.

Instruments, Methods and Results

1) Analysis of Interview Data: Thirteen patient rating scales were analyzed. Seven of these measured affect (how impatient, annoyed, forgotten, worried, relaxed, crowded and confined patients felt), and four reflected patient evaluations of the physical setting (how attractive, cheerful, comfortable and full of people the waiting room seemed). The remaining two scales represented patients' overall evaluation of their admission and their perception of the wait (how long it seemed).

Numerical ratings on each six-point scale were averaged and group means were compared in 13 separate t-tests. The results showed a signi-

ficant difference between the two groups on one scale. Patients who waited for admission when the television was on felt less worried than patients waiting without the television set. Means were 1.76 and 2.29 respectively, $N = 91$, $df = 72$, $t = -2.14$, $p < .025$.

However, since the number of t-tests that were carried out may have increased the chances of a Type I error occurring, it is possible to claim that the one significant result was due to that error rather than to the treatment.

2) Analysis of Observational Data: Patients were observed at five-minute intervals and their activities were noted. Behaviors most frequently engaged in prior to the advent of the T.V. set were, in descending order: No Specific Activity, i.e. sitting, staring (44%); Reading (27%); Talking (24%); Dozing (3%); Other (2%). After the T.V. set was installed, the frequency of these activities changed in the following way: No Specific Activity (38%); Talking (31%); Reading (19%); Other, including T.V. - viewing (11%); Dozing (1%) (see Table 24).

A chi-square test was performed on these frequency data. Results showed a significant difference in the relative proportions of these activities within the two groups, $\chi^2 = 283$, $df = 4$, $p < .0001$. Although it was expected that the T.V. set would lead to more passive behavior, notably an increase in the No Specific Activity category, this was not the case. No Specific Activity decreased, as did the incidence of Reading and Dozing. On the other hand, the frequency of Talking, an active behavior, increased by 7%.

3) Analysis of Open-Ended Responses: The interviews of all 55

patients who were exposed to the T.V. were examined for spontaneous references to the television set. In all, 26 comments of this type were made by 21 respondents. The majority of these comments were positive (65%); while the remainder were split between negative (19%) and neutral (15%).

Table 24

Frequencies of Observed Activities Before and After Television Had Arrived

Before the T.V.		After the T.V.	
Activity	Per Cent	Activity	Per Cent
No Specific Activity	44%	No Specific Activity	38%
Reading	27%	Talking	31%
Talking	24%	Reading	19%
Dozing	3%	Other, including T.V. - viewing	11%
Other	2%	Dozing	1%
	100%		100%

$\chi^2 = 283$, $df = 4$, $p < .0001$.

Only tentative conclusions can be drawn from this investigation, given its ad hoc nature. However, the findings suggest that television does have an impact on patients' responses. On the basis of this evidence, it was decided to eliminate the 30 patients who had been admitted to the hospital prior to the advent of the T.V. from the sample, thus reducing the total number of patients in the sample from 212 to 182.

The implications of these findings will be discussed in the next section.

DISCUSSION

This section will address the following questions:

1) What are the major benefits to be derived from receiving information?

2) How does information attenuate some of the stressful aspects of the admitting experience?

3) Which types of patients benefit most, and which least, from the information provided by the hospital?

4) How do patients perceive the social and physical environment of admitting?

5) What role does Television play in the context of admitting?

6) What are the practical and theoretical implications of this research?

1) The major benefits derived from receiving information

The most notable effects of the information intervention were observed in the cognitive-behavioral realm of patient responses. Evidence reported in the previous section suggests that the majority of patients indeed processed the information which they received—as reflected in their heightened awareness of admitting procedures and nearby amenities. The link between cognition and behavior was manifested in the information condition by a reduced dependency on others for assistance. Specifically, patients who were exposed to the information intervention relied more on the instructional sign than on social cues for registration information and also approached staff with questions and complaints significantly less often than their uninformed counterparts.

It may be recalled that a major goal of this intervention was to ameliorate the image of the hospital. Results indicate that overall perceptions of the hospital were more positive as a consequence of the information which was provided. An overwhelming majority of patients in the information condition reported receiving a satisfactory amount of information from the hospital, in contrast to not only the uninformed patients in this study, but also patients in many hospital studies who cited lack of information as a major criticism of their hospitalization experience. Another significant finding concerning the role of the hospital was that patients with information were more likely to report that the hospital had done something to ease their wait than patients without information. Ratings of the hospital on its degree of concern and preparation as well as an overall evaluation of their ad-

mission reflected a similar though non-significant tendency for informed patients to give more favorable evaluations of the hospital.

The salubrious effects of information were given physiological support by findings of a slower heart rate in patients who received information. Although accelerated heart rate may be due to factors other than anxiety, e.g. medication, anemia, fever, poor physical condition, it seems unlikely that any of these factors contributed significantly to the differences between the groups, given the random distribution of illness and diagnosis types within both conditions.

In contrast, patients' self-reported emotional state did not reflect any enhancement due to information, but rather correlated with the extent of concern that patients had about their medical condition. It may be argued, therefore, that the provision of information did reduce patient anxiety, as hypothesized, but on a level that the patient cannot discriminate, given the overwhelming nature of hospital entry anxiety.

2) How information attenuates the stressful aspects of the admitting experience

Earlier in this dissertation, a number of possible rationales were advanced to explain the effectiveness of information in reducing the anxiety of medical situations as well as the stresses of density and waiting. Four functions of information were cited--preparation, explanation, distraction and environmental clarity. Comments elicited from patients concerning the utility of the written information provided support for at least three of these functions, while reactions to the signs illustrated the importance of the fourth principle of environmental clarity.

Preparation: Several patients referred to the fact that they appreciated being informed in advance of what was going to happen ("Getting information beforehand is very important"). Others were grateful for having been "told what to expect, so you have no doubts." One patient felt that the value of being informed was "so they don't spring anything on you." This observation corroborates Janis' (1958) finding that patients who were least prepared and informed experienced the greatest amount of emotional disturbance due to the unexpected shocks which they encountered in the various phases of their hospitalization. Referring to these results and to the work done on preparing children for hospitalization, Janis stressed the importance of prior information so that patients will not be unpleasantly surprised, and a sense of institutional trust will be fostered. The reaction of two patients to the written material supports this assertion: "Beautiful...

legible, informative...Everything follows as you're told to expect." "It gives you all the information you need from the time you walk in till you're ready to leave. I'll refer to the booklet at different stages in the hospital."

Explanation: A number of patients noted that the information was comprehensive and "answered what I wanted to know". In the words of one patient: "They have a procedure and follow it. If I know there's a procedure, I feel something will happen, so I'm not impatient."

Although most patients found the written information both pertinent and comprehensible, several felt that the Hospital Information booklet contained too much verbiage and doubted that the patient clientele could understand it. They recommended making the information more concise and simplifying the language. The fact that the information eliminated the need to ask questions of staff was noted by several patients, e.g. "It tells you what you want to know so you don't have to bother staff"; "Good idea—it answered alot of questions and saved staff from having to answer them." Although patients seemed to appreciate having the information available so that they did not have to rely on staff ("You don't want to be a nudge, asking questions"), it was clear that they did not perceive this as an attempt on the part of the hospital to silence them completely, but as a means of clarifying the most appropriate sources of information. As one patient stated: "It tells you who to ask and who not to ask." Another patient observed: "It makes it easier for the hospital when the patient is informed."

Finally, to back up the contention of researchers, (e.g. Barnes,

1961; Forsyth & Logan, 1968) that explanations make waiting easier, one patient summed up her impression of the information in the following way: "The hospital prepared information that explained about the wait, so it made the wait easier to take."

Distraction: Evidence that the written information absorbed patients' attention while waiting was provided by several respondents. One patient referred to the Letter of explanation and Hospital Information booklet as "a good idea for filling in the time" and another stated: "I liked having all that information while waiting." Further confirmation of the beneficial impact of this intervention on patients was supplied by examining patients' responses to the question: Was there anything you did or brought with you to make the waiting easier? Twenty-one per cent of the patients in the Information condition answered that reading the information supplied by the hospital made the wait easier. In the words of one patient: "I found the literature very distracting. I was reading the information; therefore, the wait didn't seem long."

Reassurance: The ultimate goal of the preceding strategies was to effect a more relaxed emotional state for those in stressful situations. Some of the patient responses to the information reflected such an enhanced state, e.g.: "Marvelous...Relaxing--answers all questions, even unspoken ones."; "I'm happy to get this information."

Reiterating a problem which emerged in the exploratory research, patients often felt abandoned and forgotten because they had to wait so long to be admitted to the hospital. Consequently, a major aim of the information intervention was to reassure patients that they had not been

forgotten. Evidence that this goal was accomplished was found in the responses of the following patients: "I found it (the information) reassuring..."; "It's comforting to know there's help--you're not here alone"; and finally, "The letter made me feel they'll care for me once I'm in the hospital."

Environmental Clarity: This function of information was provided by both the written material and the directional signs. As reported earlier, the vast majority of patients who used the amenities found the directional signs helpful in guiding them to their destination. However, the number of users was quite small (only 15 in the information condition), and not all patients saw the sign (only 47% said they had seen the directional sign to the amenities). Only one sign was mounted in each waiting room, and the seating arrangement in Waiting Room A was such that some patients had their backs to the sign. Although a number of patients reported that the signs had enabled them to get to the Cafeteria without getting lost (a rare feat at Park Hospital!), and others said they knew about amenities in the area from the signs, several patients suggested that there should be more than one sign in the waiting area so that all patients could view this information.

In many instances, the people who were most appreciative of the directional signs were the staff. The Security guards, who are normally the ones patients and visitors turn to for directions to various amenities, were very grateful when signs first appeared. One called the researcher over and said: "You left out two things. Add the A_____ and C_____ Pavilions (to the sign), because now people don't ask me how to get to the cafeteria or the bathroom, but they ask me how to get to the A_____ and C_____ Pavilions." (G.B., Jan., 1980) Another person who

was glad to see the cafeteria sign was a management consultant: "I've been standing here doing a study of food carts and people always stopped to ask me where the cafeteria was. I was so happy to see the sign there. That was going to be one of my recommendations--to put up a cafeteria sign." (D.S., Dec., 1979)

Some staff members pointed out to the researcher that legible signs were lacking in quite a few areas. The patient-flow coordinator, for example, requested a sign directing people to the testing area, and similar requests were made by personnel in other departments.

Thus, the four functions of information cited earlier were confirmed by patient and staff responses to the intervention in the admitting waiting area.

3) Types of patients who benefit most and least from the information

Reference has already been made to the generally beneficial effects of information on the attitudes and behavior of patients receiving it, as well as on several staff members. In addition, the significant interactions yielded by multi-factor analyses documented the enhanced responses produced by information among certain types of patients. Generally, these were patients who had the greatest need for information and/or who were most distressed and critical of the hospital because of the unpleasant circumstances characterizing their admission. The patient categories who benefited most and least from the information will be enumerated below:

Newcomers to the hospital: Patients receiving information who had never been hospitalized before felt that the hospital had done much more to ease their wait than did hospital newcomers who received no information. It is understandable that inexperienced hospital patients would have a greater desire for information, and that receipt of this information would result in a more positive attitude toward the hospital. As one patient stated: "The information was very helpful...I felt apprehensive, never having been in a hospital before." Also, the fact that there were fewer former Park Hospital patients in the Information group indicates that patients already familiar with the hospital environment were less interested in reading the materials, presumably because they had less need for information. Although one veteran Park Hospital patient responded to the information positively: "I liked what I read and learned something, even though I was here four months ago", another expressed the views of several former hospital patients

in stating: "The information is fine, but I already know everything--I've been here eight times." Despite their reduced need for information, former Park patients were observed reading the material (otherwise they would not have been included in the Information group). Perhaps these veteran patients still found it useful to refresh their memory, even though they felt they already knew much of the information.

Sex: Although many patients expressed their apprehensions about being in a hospital ("I'm very nervous—I don't know what's ahead"), more female patients admitted to being worried than did male patients. This finding is not surprising, given traditional sex-role stereotypes which permit women greater freedom than men to verbalize their fears and anxieties. However, in rating how relaxed they were, informed female patients emerged as more relaxed than uninformed female patients, while informed male patients were less relaxed than uninformed male patients. It is possible that men who read the information were more upset about the likelihood of having to wait, whereas women may have used the information to allay their fears. Of course, the fact that women admitted to being more worried does not mean that men were not as worried, but perhaps they expressed it differently. For example, a 66 year-old female with a Hyperparathyroid condition stated: "I'm frightened sick; I don't want the surgery. I've had many sleepless nights... now I just want to get it over with." In contrast, a 69 year-old male entering the hospital for a hernia operation, when asked if he had any particular feelings, bellowed: "I just want to get the hell out of here!"

It was anticipated that the most negative responses to the hospi-

tal would come from three groups of patients: those waiting longest, those waiting under conditions of higher density, and those patients with higher expectations. This was, in fact, the case; however, in some instances, information served to ameliorate these responses. The effects of each condition on patients' responses will be discussed separately, with attention given to the role played by information in mediating some of the negative responses.

DENSITY

Direct and Indirect Negative Effects

As expected, patients who waited to be admitted under conditions of higher density rated all aspects of their admitting experience more negatively than did their counterparts in the lower density condition. This distinction was particularly marked in the tendency of high-density patients to overestimate their waiting time, to evaluate their wait as longer, and to perceive the hospital as having done nothing to ease their wait.

Since it turned out that the Information phase was characterized by greater density than the non-Information phase, the tendency of informed patients to rate the waiting room as fuller was an accurate reflection of external conditions. As noted earlier, the higher density of the Informed condition might also account for the fact that patients in that condition did not underestimate their waiting time, as expected, nor did they evaluate their room environment more favorably. An alternative explanation for the latter may have been the stacks of bulky information packets on the waiting room tables, which may have added to

the perceived congestion and made the waiting room appear less tidy and more cluttered.

Density and Perceived Crowding

It is noteworthy that patients responded to increased social density by rating the room as being more full of people, although they did not necessarily see themselves as more crowded and confined. In questioning patients about how crowded they felt, the concensus which appeared to emerge was that patients usually did not label themselves as crowded unless they had no seat. Hence, the actual experience of being crowded seemed to hinge, at least in this situation, on a perception of resource scarcity only if patients were directly affected by this scarcity, as in the case of patients who were forced to leave the main waiting room because of the lack of seats. This finding implies that as long as patients had a seat, and therefore, a demarcated territory, they felt reasonably comfortable, despite the presence of many other people in the waiting area. Perhaps that is why experimental attempts to induce feelings of crowding (e.g. Freedman et al., 1971) when all subjects had their own seat were not always successful. Generalizing to a more natural and recognizable high-density setting, riders on the subway during rush-hours probably feel less stressed and less crowded when they have a seat than when they are standing.

The fact that patients differentiated between feeling crowded and rating the room as more full of people in recognition of increased density levels, lends validity to the cut-off point of 21 occupants as the upper-bound of the lower density category, since an occupancy of 22 would indicate that someone is seatless, and that is when feelings of crowding are likely to be experienced.

Information and Density

Many patients in both conditions complained about the inadequate size of the waiting room or the unexpected numbers of people. However, a comparison of high-density occupants who had no information with those who had information showed that information can ameliorate the effects of high density, particularly in regard to perceptions of crowding, room density, hospital concern, and overall evaluations of admitting. This observed trend supports the research of Langer & Saegert (1977) who found that informed shoppers in high-density conditions performed better and felt better than uninformed high-density shoppers. However, in their study, the most positive affect and performance ratings were those of the informed/low-density shoppers, followed by uninformed low-density shoppers; whereas in the present study, although the least satisfied patients were, similarly, the high-density/uninformed group, the most satisfied tended to be the uninformed patients in lower densities. It may be that patients who received information in the lower density condition were led to expect more from the hospital. Consequently, if their admission did not go as smoothly as expected, they may have been more critical of the hospital and more dissatisfied with their admission than they would have been in the absence of reassuring information and in a more congested waiting environment.

Although the differences between informed high and low density patients were not significant, means were in the expected direction, with higher-density patients showing a greater reliance on and appreciation of the information provided, as the cognitive overload position would predict. The small number of informed patients who used the amenities and the ceiling effect created by a positive overall rating of the signs

made it extremely unlikely that significant differences would be found between the two groups in their perceptions of the sign's utility. To sum up, the information provided seemed to be of greater value under higher-density than lower-density conditions.

WAITING TIME

As described earlier, the long waits which characterized many hospital admissions were particularly upsetting to patients. Frequently, patients commented that their admission was good—except for the wait. Results showed that patients who waited longest (one hour or more) perceived their wait as very long and gave the lowest overall evaluation of their admission. Also, the longer patients waited, the more impatient, annoyed and forgotten they felt. A number of patients even considered leaving ("...I was debating whether to walk out when they called by name"). Blame for this situation was assigned to the hospital; hence, the more unfavorable evaluations of the hospital on the part of patients in the longest-wait category.

There is evidence, however, that part of the negative impact of a long wait was softened by the information which the hospital provided. Significant interactions between information and waiting category on two of the hospital evaluation variables showed that patients in the longest-wait category who also received information gave the hospital a more favorable overall evaluation and felt the hospital was more prepared for them than did patients in that waiting category who received no information. Thus, the provision of information seemed to mollify patients who would otherwise have been quite upset and angry at the hospital because of their long wait. As the patients quoted earlier made

clear, the distractive and explanatory qualities of the information made the wait more tolerable.

PATIENT STATUS AND EXPECTATIONS

The fact that both Jewish and Private patients tended to be more critical of the hospital is not surprising. The expectations of Jewish patients were probably raised because Park Hospital, although officially non-sectarian, has traditionally been considered a Jewish hospital. The availability of Kosher food, the preponderance of Jewish donors, and the full-time services of an Orthodox chaplain reinforce this link, and may enhance the appeal of the hospital for more traditional Jewish patients as well as lead them to anticipate better treatment, since it is "their" environment. A similar attitude was noted on the part of Catholic patients at a well-known Catholic hospital (Olsen, 1979).

The higher expectations of Private patients (i.e. patients with a private room) probably derive from the fact that they have paid more for their room. The Semi-Private room rate is covered by conventional health insurance plans, but the difference between Semi-Private and Private rates must be made up by the patient.

Semi-Private rooms at Park Hospital are less desirable because they are two- and four-bedded, so that the luxury of having a room to oneself must be paid for by the Private patient. Perhaps this is why a number of Private patients complained about the "clinic atmosphere" of the waiting areas, and suggested that Park Hospital make a separate waiting area for Private patients. Although Private patients' evaluations were almost invariably more negative than those of Semi-Private patients, Private patients who received information felt the hospital

was significantly more concerned about them than did Private patients who received no information. It is noteworthy that uninformed Private patients gave the most negative evaluations while informed Private patients gave the most positive evaluations, thus further illustrating the role of information in appeasing a critical patient sub-category.

In contrast to Private patients, Clinic patients, who are assigned to special four-bedded rooms by the House staff, saw the waiting room as more cheerful and attractive than either Private or Semi-Private patients. While differences were not significant in all response categories, Clinic patient ratings tended to be more favorable than those of both Private and Semi-Private patients. These ratings probably reflect the lowered expectations of a relatively powerless group within the hospital and other settings (Hurst & Zambrana, 1980). People of lower SES generally have to wait longer for medical and other services, e.g. welfare, unemployment (Alpert et al., 1970; Sussman et al., 1967) and are more likely to experience higher density and reduced choice than those in a higher income bracket (Rodin, 1976). Their cumulative experiences with density and waiting may increase Clinic patients' tolerance of similar conditions in the hospital. As one Clinic patient patient stated: "I know that every place I have to wait, so the wait don't bother me." Alternatively, because of their powerlessness, they may feel too dependent on the good graces of the hospital and its staff to complain about any aspect of their admission.

The fact that significantly fewer Clinic patients were included in the Information condition is important on two accounts. One is that, since Clinic patients tended to give more favorable evaluations, their higher representation in the No-Information condition may have

inflated the overall ratings of that condition. This distributional imbalance might account for the lack of differences between the two groups on such response dimensions as perceived waiting time and evaluations of room environment, and may have contributed to the tendency of informed patients to see the waiting room as fuller than uninformed patients.

Another point must be made in regard to the dearth of Clinic patients (eight in all) in the Information condition. Since inclusion in this category hinged on a patient's reading of the written information, it must be concluded that fewer Clinic patients read the information provided. It is open to conjecture as to whether fewer Clinic patients felt they needed the information, whether the material seemed too dense and technical to appeal to them, whether they were more interested in other activities, e.g. talking to companions or watching T.V., or perhaps a combination of all these factors. What some of these interpretations do suggest, however, is the need to make information available in a variety of formats, using media other than print, and packaging the information in a more graphic and interesting manner. Alternative modes of disseminating information will be discussed in a later section.

To summarize, those patients who appeared to benefit most from the information provided by the hospital were: hospital newcomers, females, higher-density, longer-waiting, and high-expectation patients. The ameliorating effects of information were often manifested in more favorable ratings of the hospital--which dramatizes the value to the hospital for making the information available.

On the other hand, those patients who benefited least, either

because they did not seem to want or need the information as much, or because they were unable to absorb the information in its present form, were: male patients, Clinic patients and former Park Hospital patients.

4) Patients' reactions to the physical and social environment

The Physical Setting

Reactions to the admitting environment were mixed. As described earlier, Private patients tended to be more critical of the waiting area than Clinic patients. They rated the room as less attractive, cheerful and comfortable than did Clinic or Semi-Private patients. Dissatisfaction with the room environment may have contributed to the tendency of Private patients to feel more crowded and confined as well.

The contrast between Waiting Room A and Waiting Room B was particularly striking. Patients who waited in Room B gave much more negative evaluations of the setting than did patients who waited in Room A. Comments about Room B were quite trenchant: "Awful"..."Grossly unattractive"..."Made me feel nervous"..."Sleezy little box"..."Seems like someone knifed the seats" (referring to the ripped upholstery).

Reactions to Room A tended to be more positive: "Bright, cheerful"..."Liked the colors"..."Lovely paintings on the wall"..."Enjoyed the window--watching people go by." Not all patients were uniformly enthusiastic about Waiting Room A, however. Some pointed out that the wallpaper was ripped, the plants needed attention, the seating was inadequate, and the temperature was either too hot or too cold. Many patients felt that the waiting area should be enlarged to accommodate all the people who arrived at the Admitting office. Suggestions for improving the waiting areas ranged from a total redecoration of Waiting Room B to the addition of more seats, plants and a coat rack to Room A, and dimmer lighting, soft music and the serving of coffee and light refreshments in both waiting areas.

Although opinions were divided concerning the orange color and motif of Waiting Room A—some thought it bright and cheerful; others thought it "strange" and tasteless—comments about the prints hanging on the wall were uniformly positive, as were the general reactions to having access to the outside world through the window. These favorable responses to sources of distraction within the waiting area are evocative of experimental attempts in other settings to reduce boredom and perceived crowding by introducing elements of visual complexity into a particular setting. Specifically, wall posters, a window view, movies and slides, have been used as distractive foci to alleviate problems arising from sensory-deprived and sensory-overloaded environments (Evans, in Aiello & Baum, 1979; Kanfer & Goldfoot, 1966; Vieth, 1979; Worchel, 1978). Since they absorb people's attention, such devices may serve similar cognitive functions to the signs and written materials which were part of the intervention in the present study.

Some patients complained about the lengthy exposure in the waiting room to sick people, which they found unpleasant. This echoes a frequent concern of patients both in outpatient clinics and sharing hospital rooms with very sick and dying patients (e.g. Kirsners, 1975; Kornfeld, 1972; Neumann, 1974; Olsen, 1978).

Finally, patients who attempted to use the bathrooms were often dismayed by their condition. The Ladies' Room, with just one toilet and sink, was especially overloaded, and users frequently had to stand on line to use the facility. In addition to the long waits for bathrooms, patients complained about the lack of toilet paper and the general unsanitary state of these facilities. Some female patients decided not to use the bathroom at all because it was so dirty. Con-

sidering the fact that these are hospital bathrooms, where hygienic standards should be stricter than anywhere else, patients' complaints seem justified.

In general, the appearance of the physical setting can affect the attitudes and behaviors of its occupants. A dilapidated waiting area transmits a symbolic message that the hospital does not care about the needs of patients waiting there. The same is true of other facilities in the hospital. The connection between perceptions of the physical environment and the degree to which the hospital seems concerned about its patients was underscored in a factor analysis of patient responses. Ratings of the physical setting were found to be positively correlated with evaluations of the hospital's concern.

Thus, the environment of the hospital admitting area can contribute to patient satisfaction in tangible and symbolic ways: spatial inadequacy can cause discomfort and dislocation; a squalid appearance can evoke depression, annoyance and avoidance; and neglect of the physical environment in general reveals a hospital attitude that may create serious doubts in the patient's mind about the quality of care which she or he can expect to receive in subsequent phases of hospitalization.

The Social Environment

In contrast to the mixed responses of patients to the physical environment, their evaluations of staff performance were, on the whole, very positive. Patients tended to see the Admitting interviewers and technicians (Blood, X-Ray, EKG) as efficient and quite warm and friendly. These ratings confirm the impressions of the researcher, which

were based on observations, discussions with the administrative staff, and an examination of the complaint and complimentary patient letter file, that staff treatment was not a major problem in this setting. Since the pre-information ratings of staff were already very favorable, there was no expectation of a significant enhancement due to information. Also, since staffing remained constant in both conditions, staff ratings were expected to remain constant as well, thus eliminating possible attributions of attitudinal and behavioral differences between the two groups to staffing effects rather than to the treatment effects, i.e. the intervention.

The one exception to the generally positive evaluation of staff members, was the more negative rating of their EKG technician by patients in the Information condition. What seemed to bother most patients was the mechanical, impersonal way they were treated, which was accentuated by the fact that, at times, the two technicians were holding a conversation between themselves about some mundane matter, e.g. clothing or food, and barely acknowledged the patients who were undergoing this procedure. One EKG technician in particular seemed to be experiencing mounting frustration on her job. This feeling culminated in an explosive outburst in a waiting room full of patients.

Comparing patient reactions to the other testing procedures--to having blood drawn and being X-Rayed--it appears that two factors operate to produce increased tension and sensitivity to staff treatment. One is the extent of physical contact or access to the patient's body afforded technicians in each procedure (which is minimal for X-Rays, moderate for blood tests, and maximal for EKG's); the other is the temporal duration of staff/patient interaction which the procedure requires

(again least for the X-Ray and most for the EKG). Consequently, the X-Ray posed the fewest problems of the three procedures for patients; it was quick (usually over in two minutes), so that minimal time and bodily privacy had to be invested. It is interesting to note, in this context, that patients had few negative comments about their Admitting interviewers. This may be due to patients' relief, after waiting, at finally being called by an interviewer to begin the process of admission, or it may be related to the fact that even though verbal information of a personal nature was transmitted during the interview, it was not considered to be as intrusive as when one's bodily privacy is invaded by a stranger.

Patients often disliked having blood drawn—they feared the pain and were grateful if it was done skillfully and without hurting, and resentful if it was done impersonally and caused pain. The EKG procedure, which entailed the placement of electrodes on the patient's body, while not painful, was often anxiety-provoking to novices, who had little knowledge of what the test was all about, as well as to veterans, who were concerned about the results of the EKG and were upset that they were not given any information. Patients were unaware that technicians do not read the EKG because they usually have minimal training in its interpretation. EKG's are generally read later by the patient's doctor. Although some EKG technicians were very sensitive and skillful at reassuring patients, others were not. Another basic difference between the blood and EKG testing, in addition to the physical contact and temporal duration, is that patients having blood drawn sit on a chair and are dressed in their own clothes; whereas those having an EKG are lying down and wearing a skimpy hospital gown. It is

reasonable to assume that patients receiving an EKG feel less in control and more in need of information and reassurance. Perhaps the information which they had previously received from the hospital disposed informed patients to expect more information and reassurance from the EKG technician than did uninformed patients.

Given the tendency of informed patients to rate their EKG technician more negatively, it is all the more remarkable that the average heart rate of informed patients was significantly slower (indicating less anxiety) than that of uninformed patients. Furthermore, since the EKG was the last procedure which patients underwent before they were interviewed by the researcher, it is surprising that the unfavorable evaluation of the technician did not produce a "recency effect", and negatively color their overall evaluations of the admitting experience (Of course, it could be argued that a more positive EKG experience would have produced more significant differences between the two groups in the expected direction.).

Several factors may have served to mitigate informed patients' responses. One was that despite their perception of the technician as less warm and friendly, informed patients' rating of the efficiency of the technician did not vary significantly from that of the uninformed patients. Another factor was the tendency for patients to minimize backward glances and to focus on the next step as soon as they were finished with one phase. In other words, they were relieved to be finished with another stage, and were now concentrating on what was ahead. The "work of worrying" which Janis described seemed to manifest itself in future-oriented concerns, e.g. getting to the room, seeing the doctor, receiving visitors.

A third factor, which might have affected patient perceptions of staff was their perceived vulnerability and lack of status within the hospital system. It was obviously not in patients' best interests, both from a practical and psychological point of view, to be overly-critical of hospital personnel, since they would be relying on the good will of various staff members to get them through some critical procedures in the days ahead.

Despite the fact that a number of patients in both conditions expressed negative feelings about the way they were treated by the technicians ("Health is a personal thing...they shouldn't treat us like cows"), when asked if that kind of treatment bothered them, they usually replied that they hadn't expected any better, given the nature of the technician's job (seeing so many strangers in one day) and the fact that it was a large, urban hospital. This response may have been a form of denial, given the expressed feeling which preceded it, but it seemed to serve as a protective device for patients, which enabled them to rationalize their negative experience and minimize its impact so that they could face the next stage in a more hopeful frame of mind.

Before leaving this section, it should be mentioned that the researcher noticed a change in patients' behavior from the time they entered the Admitting office to the time they were ready to go to their rooms after testing had been completed. It seemed that the accumulated stresses of waiting, exposure to numerous strangers, testing, and the experience of being led from one procedure to another, had worn patients down and made them more malleable and submissive. No patient was grossly mistreated, but subtle cues conveyed the hospital's expectations that patients comply with the requirements of the staff and the system with-

out raising any objections or asserting themselves too forcefully. Not all patients capitulated so easily to hospital demands, but the low refusal rate encountered by the researcher in soliciting participants in this study illustrates the degree to which patients were willing to submit to a total stranger's request for information. Although the researcher disassociated herself from the hospital, it could be that many patients felt they had already surrendered both bodily and informational privacy, so they had nothing left to lose.

Another reason patients agreed to be interviewed was that having someone to talk to constituted an emotional release as well as a distraction. When asked at the end of the interview to what extent they had been concerned about their medical condition while talking to the interviewer, quite a few patients noted that the interview had taken their mind off their problems, and that they were grateful for the distraction.

In conclusion, the transformation of hospital newcomers into hospital patients was achieved by a combination of factors in the admitting environment. The procedural, social and physical elements of the situation all contributed to the socialization of incoming patients into the patient role, producing behavioral changes which presumably reflected an internal psychological adjustment to the norms and routines of the institution.

5) The role of Television in the context of admitting

A comparison of patients who waited to be admitted to the hospital in the presence of a television set in the waiting room with those who waited without a television set revealed that patients' behavior and emotional state can be affected by television, but not in the way one would predict.

The increased conversation which took place among patients in the waiting room was contrary to expectations, since T.V. is generally thought to induce more passive behavior in its audience (Bettelheim, 1960). Of course, the context of television-viewing was not the usual one: people were not relaxing in their living rooms, but were sitting in a hospital admitting office anxiously waiting for their name to be called.

Several interpretations might be made in regard to the unexpected increase in verbal activity which was observed in the waiting area. One is that the auditory output of the television produced a "social facilitation" effect. In other words, people hearing T.V. dialogue may have felt less inhibited about engaging in their own personal conversations. In this case, television may have altered the norm of silence which generally prevails in doctors' waiting rooms. Moreover, people tend to be self-conscious about talking in a silent room, since what they say can be overheard by all present. The background noise of the television, however, may serve to mask the content of the conversation and thus provide more privacy for interactants. Another interpretation is that the medium itself provoked reactions among patients. The content of the television programs and/or the mere presence of the set in the waiting

environment may have stimulated conversation among waiting patients.

Either of these factors may have provided patients with an excuse to talk to one another, and in that way to reduce their anxiety. Schachter (1959) found that people prefer to affiliate under stressful conditions, and the fact that patients in the T.V.-group reported themselves less worried than did patients in the pre-T.V. group provides evidence that T.V. can mediate responses to anxiety-provoking situations. The distraction afforded by watching television may explain the positive effects it was found to have on patients' emotional state. Since T.V. is a compelling medium, it tends to attract attention almost immediately. As with other visual media, its success depends on its continued ability to channel people's attention away from the aversive elements in a situation. The constant action on the picture tube usually ensures that it will hold people's attention, at least for a short while.

The implications of these findings for the admitting experience and other situations of anxiety are numerous. As a popular entertainment medium, T.V. could be used to project information to patients who do not have the ability or interest to read information in printed form. Closed-circuit T.V. or videotapes could be useful in introducing patients to admitting procedures, the hospital and the staff so that patients might be better prepared for the experiences which lie ahead. Encountering a visual image of the people and places which will figure prominently in their hospital experience could reduce the possibility of unpleasant surprises for patients even more than reading could. Another advantage is that explanations and reassurances could be provided through this medium, and might be more effective verbally than on paper. The opportunities for environmental learning afforded by T.V.

(Hamlin, Nelson-Shulman & West, 1977) should be explored further.

Using television as a channel of information may also have certain drawbacks, however. One could argue that patients might be turned off by viewing a hospital environment that is only minimally appealing, and might become even more anxious at seeing the testing labs, since they are associated with potentially painful and invasionary procedures. It may be that the therapeutic role of television derives from the diversion which it offers people. In other words, it helps to focus attention away from the primary activity, rather than focusing on the fact that patients are in a hospital. Also, the association which people have to the normal circumstances of T.V. - viewing might make them feel less anxious, since this is an activity that they usually engage in when they are relaxed and healthy. Converting television into an educational medium, therefore, might diminish rather than enhance its appeal to patients.

An interesting researchable topic would be to compare the effects of informational television-viewing with entertainment-viewing in the context of a stressful situation such as admitting so that the relative utility of the two forms of distraction could be assessed. Janis would probably maintain that the educational format is healthier since it gets the work of worrying underway and enables patients to develop appropriate coping strategies for dealing with the situation. The entertainment format, on the other hand, might encourage escapism and denial that would later lead to disillusionment and distrust on the part of the unprepared patient. Of course, it would also be possible to use both formats in alternating succession, i.e. a brief introduction to the hospital, followed by a brief entertainment piece.

Another way in which T.V. might be used productively is to promote feelings of control in patients by providing relaxation and desensitization exercises. In one hospital study, patients who focused on the beneficial aspects of their surgery and hospitalization experienced less stress than did patients who were given a realistic appraisal of what to expect post-surgically (Langer et al., 1974). By emphasizing the positive aspects of the patient experience and giving patients exercises and coping statements to practice, television might be used more directly as a therapeutic agent, and the pitfalls of exposing patients to overly-threatening scenes might then be avoided. As hospital researchers have shown, anything which gets patients to assume a more active role in their hospitalization is of tremendous physical and psychic value (Bender, 1976; Langer et al., 1974; Olsen, 1978).

In summary, T.V. could provide all the beneficial functions provided by the information materials used in the present intervention--preparation, distraction, explanation, reassurance and environmental clarity. Whether the medium could be used more effectively to disseminate information which focuses on patients' current situation, or to provide diversion which would take patients' minds off their situation is an interesting theoretical question which merits empirical investigation. The possibility of providing assistance to patients in the form of therapeutically-oriented materials, such as coping statements, is also an interesting possibility which should be explored, since it has been used so successfully in similar anxiety-provoking contexts.

6) Practical and theoretical implications of this research

The findings of this study have both theoretical implications for the study of stressful environments, as well as practical applications to hospital admitting and other settings where people wait under conditions of varying density.

The role of information as a cognitive mediator of stressful experiences was given further support by some of the results which were described. The major functions of information in a high-arousal setting seemed to be: preparing users for what was ahead, explaining details and answering people's questions, clarifying the environment for users, providing reassurances and directing people's attention away from the aversive elements of the situation.

Although information was found to be useful in some respects, it was not a panacea, and did not ameliorate patient responses in all categories. Evidence does indicate, however, that information helped patients in the more extreme situations--particularly, those who waited longest and under high-density conditions. The social overload model of density received further support from the finding that patients in higher densities benefited more when informed than did patients in higher densities without information. Furthermore, trends showed that informed high-density patients benefited more than informed low-density patients, which supports the contention that information is of primary value when social stimuli compete with environmental stimuli for the individual's attention. Information was of limited value--even detrimental--to patients in lower-density conditions, perhaps because their expectations were raised unduly by the hospital's reassurances and their own perceptions of low social density, thus removing objective ration-

ales for the prolonged admission.

Other categories of patients who benefited from the information, under certain circumstances, were patients of a higher SES, patients being hospitalized for the first time, and female patients. All of these groups were characterized by a higher level of expressed stress, due to such factors as lack of hospitalization experience, more unfavorable waiting conditions and a greater tendency to verbalize feelings of discomfort.

The study also identified those groups for whom information was not valuable, e.g. former Park Hospital patients, male patients, and lower SES patients. However, it may just be that particular types of information are more suitable to some patients than to others. For example, higher SES patients tend to be better educated, and therefore probably more accustomed to obtaining information from printed literature; whereas lower SES patients may tend to rely on other media, e.g. radio and T.V., for information. The packaging of information is critical; to ensure the widest possible audience, attention must be given to both form and content. A more attractive, concise and pictorial format may have been more simple to follow and more interesting to read, and perhaps would have attracted a larger number of Clinic patients to the Informed condition.

The issue regarding which types of information are most useful to which types of patients requires an investigation of the various formats included in the intervention. Since instructional and directional signs were provided in conjunction with written information, it is difficult to separate out the effects of one channel of information from another. Future research endeavors should include phased interventions,

i.e. different formats introduced at different stages of the intervention, so that the separate as well as collective effects of each format can be determined. In addition, since distraction is a major component in the cognitive mediation of stress, the medium of television should be compared with print and pictorial media to ascertain whether certain forms of distraction are more effective in reducing anxiety among various patient types.

Additional dependent and independent measures would be of value in answering questions raised by the results of this study. A finding of critical importance to the role of information in enhancing performance was that patients' reliance on staff decreased in the Information condition. The fact that informed patients approached staff less often to ask questions or raise complaints, and that they relied more on signs than on social cues for registration information, implies that patients who received information were more autonomous and better able to function on their own than patients without information. If this is the case, enhanced self-esteem and perceived control could be assessed by using relevant personality tests, e.g. locus of control measures, as well as rating scales to assess informed patients' willingness to accept the patient role.

Furthermore, the finding that patient-initiated interactions with staff were almost cut in half in the Information condition suggests that staff workload was appreciably reduced, since there were fewer interruptions in their work routine. This assumption could be tested by measuring actual output as well as perceived productivity (self-report).

Another research question raised by these results relates to the information manipulation. Although the present study tended to cor-

roborate other findings on the beneficial aspects of information, such dependent variables as self-reported affect and crowding were not found to be affected by information, as they were in other studies (e.g. Langer & Saegert, 1977; Wener & Kaminoff, 1979). This difference may be partially due to variations in the way information is operationalized from one study to another. Similarly, with definitions of crowding. It would be helpful, therefore, to use a similar information paradigm to one which has already been used in order to assess whether the effects would be the same. Langer & Saegert (1977), for example, gave shoppers information about expected physiological arousal in a reassuring way. Following this approach, patients might be given similar predictions about anticipated arousal, coupled with reassurances that this reaction is normal for patients entering a hospital admitting office filled with people. It might be expected that under these circumstances, self-reported affect measures including perceived crowding would prove sensitive to the information manipulation and would match physiological measures of arousal obtained from patients' EKG.

As far as the hospital is concerned, a number of tangible and symbolic benefits were derived from the information intervention.

Public-Relations

The image of the hospital was measurably enhanced by the provision of information to patients. The beneficial effects of information in the more extreme categories and conditions were reflected in the more favorable hospital ratings of certain groups of patients. What these findings indicate is that even though information alone was not sufficient to reverse all the negative effects of density and waiting, it seemed to effectively convey at least the hospital's concern for patients; hence the improved evaluations of the hospital in the Informed condition.

Cost-Effectiveness

A savings for the hospital was demonstrated in the reduced demands on staff by patients who received information. Fewer work interruptions meant that hospital personnel could pursue their designated tasks with minimal interference. This benefited staff, patients, and hospital, since frequent interruptions not only undermine productivity, but tax the patience and sympathy of staff members when interacting with patients. In the current climate of fiscal constraint and reduced spending which characterizes most major institutions, changes that can be implemented at minimal cost, and which result in reducing staff time while creating more support and satisfaction for users, should be of maximum value. The addition of an information system to the waiting environment of an Admitting area was shown to produce these results,

and it would behoove the hospital to consider similar innovations in the future.

Recommendations

As indicated previously, the hospital should increase signage so that information about amenities is visible to all patients. Also, the hospital should experiment with various media of information to see which types are most effective in reducing anxiety for different subpopulations of patients. Information systems which make patients more knowledgeable and which are embedded in the environment have proven beneficial from the standpoint of the hospital, the staff and the patient. However, signage and written material cannot completely eliminate the need for verbal reassurance, especially if patients have been waiting over an hour. Several patients who waited a long time to be admitted felt that someone from the Admitting office should periodically announce delays as a courtesy to waiting patients. As one patient said: "The booklet (information packet) is good, but if you don't read or are too nervous, they should make an announcement that there will be a delay because of____". Another elaborated on this suggestion: "When you're stuck on a train and the conductor says 'We have signal trouble', it helps to know." A volunteer or coordinator could make such an announcement when it seemed that patient turnover was exceptionally slow or that patients were getting restless.

Of course, this does not solve the basic problem, which is: Why do admissions take so long? What is creating the backlog which causes the waiting area to fill up with people, giving an air of chaos to what should be a calm and peaceful transition process? Logistical

changes are required so that staff is better utilized and testing coverage is expanded to prevent bottlenecks. Also, the scheduling of patient arrival times must be more realistic to avoid setting expectations which are too high. Finally, to reduce density, it may be necessary to limit the number of companions to one, since some patients brought two, three, even four people with them, which, of course, substantially contributed to the high social density of the waiting area.

In regard to staff attitudes, an in-house training program is recommended which will be aimed at sensitizing admitting personnel to patient needs and making them more aware of the comprehensive nature of the admitting experience and the significant role that each employee plays in that process.

Finally, this research challenges a basic assumption on the part of hospitals--that the major function of Admitting is a public-relations one. The results of this study suggest that the circumstances surrounding a patient's admission to the hospital may have serious implications for that patient's health. Certain stressful features of the admitting experience have been shown to negatively affect patient mood and behavior. These stressful elements may attest to the iatrogenic significance of hospital admission experiences. It can be argued, therefore, that entry into the hospital environment must be viewed as the initial step in an ongoing patient care cycle, and, like any other phase of hospitalization, must be carefully monitored to minimize risk to patients' health and well-being.

A further concern with hospital admitting is the "hidden agenda" of socializing patients into the traditional patient role. Given the deleterious effects (e.g. helplessness, depression, anger) which result

from acceptance or rejection of this role, it is doubtful that the best interests of the hospital and the patient are served by a process which is aimed at ensuring patient compliance and dependency. In light of the results of this study as well as other research which has shown that informed patients cope more successfully than uninformed patients with the stresses of hospitalization, it would seem that a more useful function of Admitting would be the promotion of autonomy and self-reliance in patients. If they received the proper encouragement, new hospital arrivals would be better prepared to face the future and to play an active role in their own treatment and recovery, if they so desired.

Conclusion

Humanizing the admissions process entails a heightened sensitivity to the physical and psychological needs of incoming patients on the part of the hospital. Though fears about their illness can never be completely dispelled, patient worries about the hospital can be alleviated by providing information which is simple and reassuring, so that patients do not feel they are being subjected to institutional arbitrariness or swallowed up by an impersonal environment. When reception to the hospital is marked by a concern for the individual, patients can feel more relaxed and secure about entrusting their lives to the hospital and its staff.

Directing patient attention away from sources of stress, such as high density and long waits, and providing opportunities for education and environmental awareness can facilitate adjustment to a new setting; however, no amount of information can compensate for insensitive treatment by staff members and an inadequate environment for patients. These factors only heighten patient anxieties about the quality of care they can expect to receive in subsequent phases of hospitalization.

The experience of stress is emotionally and physiologically debilitating, and can exacerbate whatever disease potential already exists. An admitting environment which symbolizes the hospital's commitment to patient welfare by making patients as comfortable and relaxed as possible, can foster a sense of trust, enhance patient morale, and ease the trarsition both into and out of the hospital.

Appendix A

Appendix A

D PUNC

Time-Sampling Observation Form

EXT. COND: | INT. COND: | MAG. | IN

TIME	H	S	PT. NAME	RM	Sitting Ch A	Sitting Ch C	Sitting A		Sitting C	STND A	STND C	WALK A	WALK C	RUN A	RUN C	TOTAL A	TOTAL C		PLACE R	TKNG C	TKNG P	TKNG J	TKNG V	TKNG SO	# CONT	I	O
1 2 3 4	5	6	7 8 9 10	11 12	13 14	15 16	17 18	19	20	21 22	23 24	25 26	27 28	29 30	31 32	33 34	35 36	37	38	39	40	41	42	43 44	45 46	47	48

x A

D PUNCH LAYOUT

Ø = ZERO

Observation Form

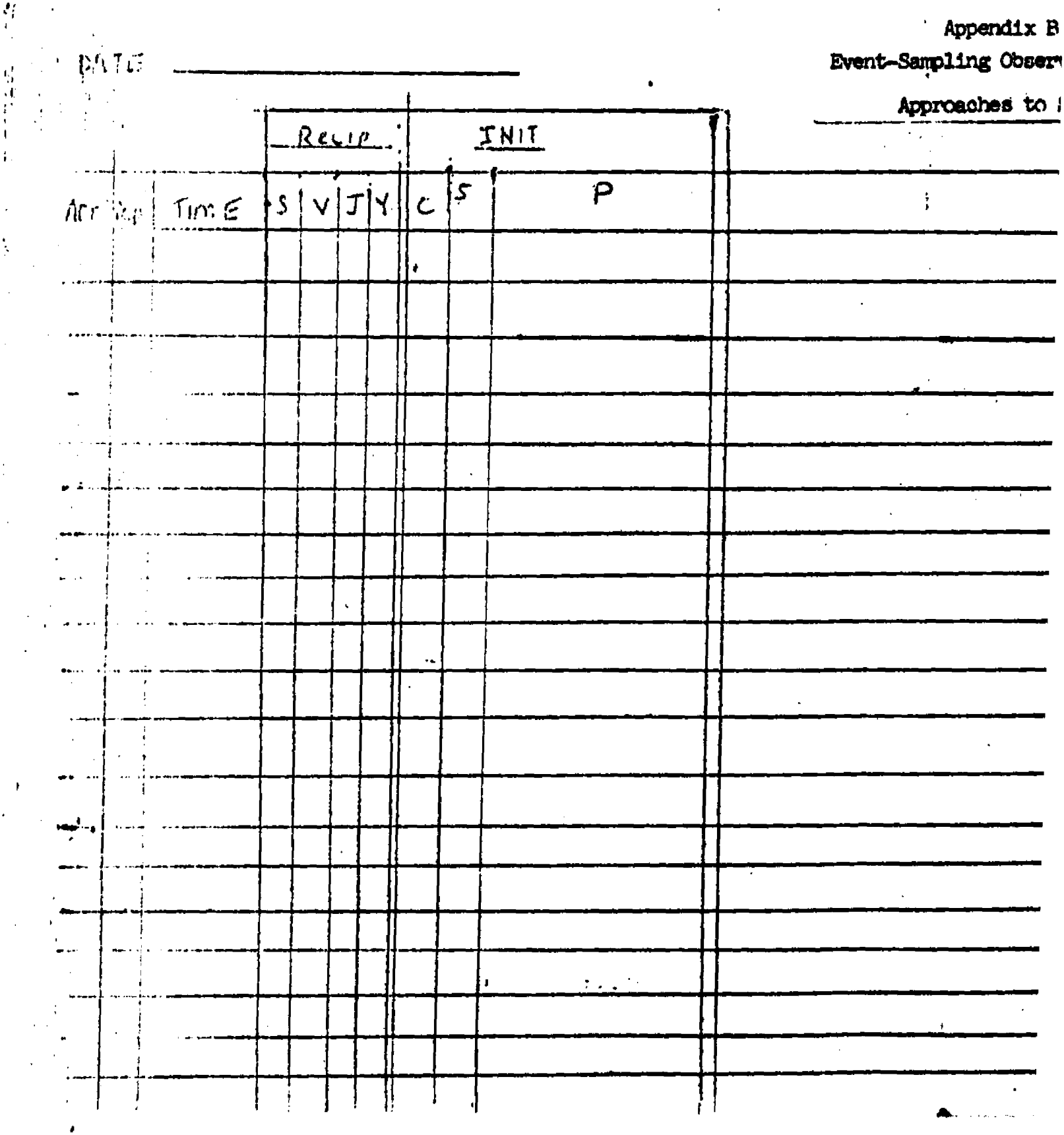
MAG. INT DATE: DAY: PGE:

TOTAL: A C | PLACE: R | TLKNG: C P J V S O | # COM | ROW: I O | T.V. | SIT: C H | V I O | CHAR / COMMENTS

34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

Appendix B


Appendix B
Event-Sampling Obser
Approaches to
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Appendix B

Event-Sampling Observation Form:

Approaches to Staff

CONTENT	NO.

Appendix C

Day _____ INTERVIEW

Date_____ Time_____

1. Sex: Male_____ Female_____

2. What language is usually spoken in your home? English____ Spanish_____ Other_____

3. Did you receive a pre-admission questionnaire in the mail? YES_____ NO_____

4. Have you ever been hospitalized before? Phone? Y ___ N ___

No_____ Yes_____ Here? No_____ Yes_____ How many times?_____

5. Have you been to this admitting area before?

No_____ Yes_____ When was the last time?_____

6. How did you know where the Admitting Office was? Ph____ Let____ Pre.Exp.____
Other_____

7. Once inside the Admitting office, how did you know where to check in? Pr. Ex.____ Sign____

Remember what sign said?_____

8. a)Was there anything about checking-in that you didn't like? No_____ Yes_____What?

_____

b) Anything about it you did like? NO_____ YES_____ What?_____

_____

c) Did you notice the sign? Y__ N__ Do you remember what it said? _____

9. a) Did you ask the person who checked you in any questions? _____
No _____ Yes _____ _____

To what extent was this person able to answer your questions? Please point to a number from "0" to "5", with "0" meaning not at all able to answer, and "5"meaning able to answer your questions completely.

0 1 2 3 4 5
Not at all able to answer my questions — Answered my questions completely

b) How busy did this person seem? Please point to a number from "0" to "5", with "0" meaning not at all busy, and "5" meaning very busy.

0 1 2 3 4 5
Not at all busy — Very busy

c)How warm and friendly was this person?

0 1 2 3 4 5
Not at all warm & friendly — Very warm & friendly

10. Did you check your luggage when you arrived? YES_____ How did you know you could do this?

Staff ____ Other _____ NO_____Were you aware that you could check your luggage? NO_____ YES_____ How did you know this?_____

11. After you checked in, while you waited for an Interviewer to call you, to what extent did you feel

a. impatient?	0 Not at all	1	2	3	4	5 Very impatient
b. worried?	0 Not at all	1	2	3	4	5 Very worried
c. crowded?	0 Not at all	1	2	3	4	5 Very crowded
d. relaxed?	0 Not at all	1	2	3	4	5 Very relaxed
e. annoyed?	0 Not at all	1	2	3	4	5 Very annoyed
f. confined or boxed-in?	0 Not at all	1	2	3	4	5 Very confined
g. forgotten?	0 Not at all	1	2	3	4	5 Very forgotten

h. Did you have any other feelings while you waited? NO_____ YES_____ What?_____

---

12. Where did you wait most of the time?_____

To what extent did you feel that the room or place where you waited was

a. attractive?	0 Not at all	1	2	3	4	5 Very attractive
b. comfortable?	0 Not at all	1	2	3	4	5 Very comfortable
c. cheerful?	0 Not at all	1	2	3	4	5 Very cheerful
d. full of people?	0 Not at all	1	2	3	4	5 Very full

13. While you waited, how much information did the hospital give you

a. about Admitting procedures?

0	1	2	3	4	5
No information					Too much information

b. about Hospital services?

0	1	2	3	4	5
No information					Too much information

14. While waiting, to what extent did you feel the hospital was

a. prepared for you?

0 1 2 3 4 5
Not at all Very prepared

b. concerned about you?

0 1 2 3 4 5
Not at all Very concerned

15. Did you ask the staff any questions while you waited? NO_____ YES_____ If Yes,

to what extent were they able to answer your questions?

o 1 2 3 4 5
Not at all able to answer my questions Answered my questions completely

16. a. Approximately how long did you wait for an interviewer to call you?_____

b. Was this about what you expected? Yes_____

No_____; I expected a shorter wait_____; I expected a longer wait_____

c. How long did the wait seem to you?

0 1 2 3 4 5
Not at all long Very long

17. a. Do you know why you waited? NO_____ YES_____ Please explain_____

_____

b. Did you ask the staff why you waited? NO_____ YES_____

18. Was there anything you did or anything you brought with you that made the waiting easier? NO_____ YES_____ What?_____

(Did you wait with anyone? No_____ Yes_____ Did that make a difference?

No_____ Yes_____ How?_____)

19. a. Do you feel the hospital did anything to make the wait easier for you?

NO_____ YES_____ What?_____

b. Is there anything (more) the hospital could have done to make your wait easier?

_____

_____

c. Did you receive a Hospital Information Booklet? No____ Yes____; Did you read the letter inside? No____ Yes____; To what extent did you find that information helpful or useful? Not at all 0 1 2 3 4 5 Very helpful

Anything in particular you liked or disliked? _____

20. While you were waiting, did you know if there were any

		Check if you used it	How did you know where it was?
a.	Restrooms in the area?	Y N	
b.	Telephones?	Y N	
c.	Water Fountain?	Y N	
d.	Cafeteria?	Y N	
e.	Waiting room for Smokers?	Y N	

f. Did you see the sign indicating these facilities in the waiting room? NO____ YES ____

g. How helpful were these signs in guiding you to your destination?

Not at all 0 1 2 3 4 5 Very helpful

21. Was there anything about your Admitting Interview you liked?_____

or disliked?_____

22. How did your interviewer treat you?_____

(If negative, How did you feel about that?_____)

23. a. How efficient was your interviewer?

0 1 2 3 4 5
Not at all Very efficient

b. How warm and friendly?

0 1 2 3 4 5
Not at all Very warm & friendly

24. Did you ask your interviewer any questions? NO_____ YES_____ If Yes, to what extent was s/he able to answer your questions?

0 1 2 3 4 5
Not at all able to answer my questions Answered my questions completely

25. Did you have blood taken? NO_____ YES_____

IF YES, was there anything about that you especially liked?_____

_____ or disliked?_____

26. How were you treated by the person who took your blood?_____

(If Neg., How did you you feel about that?_____)

27. a. How efficient did that person seem?

0 1 2 3 4 5
Not at all Very efficient

b. How warm and friendly?

0 1 2 3 4 5
Not at all Very warm

28. Did you have an X-ray? NO_____ YES_____

IF YES, was there anything about it you especially liked?_____

_____ or disliked?_____

29. How were you treated by the X-ray staff?_____

(If neg., How did you feel about that?_____)

30. a. How efficient did that person seem?

0 1 2 3 4 5
Not at all Very efficient

b. How warm and friendly?

0 1 2 3 4 5
Not at all Very warm & friendly

31. Did you also have an Electrocardiogram (EKG)? NO_____ YES_____

IF YES, was there anything about it you especially liked?_____

_____ or disliked?_____

32. How were you treated by the person who took your EKG?_____

(If neg., How did you feel about that?_____)

33. a. How efficient did that person seem?

0 1 2 3 4 5
Not at all Very efficient

b. How warm and friendly?

0 1 2 3 4 5
Not at all Very warm & friendly

34. Was there anything about waiting in the dressing area that you found particularly pleasant? NO YES DIDN'T WAIT

or unpleasant? NO YES

C - 6 -

35. Overall, how would you rate your admission?

VERY GOOD_____ GOOD_____ FAIR_____ POOR_____ VERY POOR_____

36. Is there anything you'd like to add? Anything you particularly liked or disliked? Any improvements to suggest?_____

_____

_____

_____

_____

37. While answering these questions, did your medical condition make you feel

a. worried? 0 1 2 3 4 5
Not at all Very worried

b. pain or discomfort? 0 1 2 3 4 5
Not at all Alot of pain/discomfort

Thank you for your cooperation.

TIME CONCLUDED_____

Census Data Form

Date_____

#	Name	Sex	Age	Accom	Serv	Diagnosis	Heart Rate	Unit#	Type	Pay	Rel	Mar	Residence	Disch	Other

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