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Getting Ready for Total Joint Replacement Surgery: A Pre-operative Education Program

Jason R. Delaney

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An Abstract Presented to the Faculty of the Graduate School of Lindenwood College in Partial Fulfillment of the Requirements for the Degree of Master of Science in Health Science Management

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ABSTRACT

Today's health care system is in a state of constant flux attempting to merge, decrease jobs and increase profits. A method to accomplish the goal for increased profits is to have a decline in the number of days any patient remains in the hospital. One such facility attempting to achieve this goal is a 340 bed acute care hospital in the Midwest.

In the view of the author it seems possible for the physical and occupational therapy departments to have the ability to improve outcomes and decrease the total amount of time any patient remains hospitalized. With this in mind, the author suggests an approach by which the physical medicine department can develop programs to accomplish the goals outlined.

Upon examination, total joint replacement comprises one of the five most common diagnoses at the site hospital. Therefore, the plan the author offers attempts to address the total joint population. The concept is a pre-surgical education program to answer patient questions, alleviate patient fears, and instruct patients in therapeutic exercises to improve strength prior to surgery. The following culminating project describes in detail its conceptualization through implementation as well as ideas for future development of such a program.

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Chapter I

INTRODUCTION

In the most industrially, technologically, and medically advanced nation in the world, a rampant problem exists. The nation is the United States of America, and the problem is the health care system as it exists today. There are many problems which can occur too frequently. The cost factor for rates of service appears unthinkably high. In some instances, duplicate or at times unnecessary work is performed. Patients remain in the hospital extended periods of time when insured and discharged when insurance has been depleted. In addition, hospitals are being reimbursed poorly by Medicare and Medicaid for services rendered.

Health care institutions are beginning to form alliances with other facilities in the region as well as across the country in an attempt to diminish the effects of new health care systems which may be approaching in the near future. For example, in the Midwest area the largest hospital has merged with five other Saint Louis community hospitals, and hospitals as far distant as Kansas City, Missouri. The total concept appears to be that the biggest will survive in the long run

secondary to insurance and physicians' groups refusing service to the smaller hospitals. While immense hospital groups continue to grow and attempt to draw business away from the independent hospitals, smaller facilities must seek out other means by which to draw the business of patients, physicians, and insurance companies.

Certainly the administration of all facilities, along with their marketing departments, are truly most responsible for recruitment of business. But looking internally to individual departments for development of programs to benefit the patient, the department and the hospital, could prove to be a tremendous help in increasing revenue for the individual department as well as the hospital. It is under the concept of hospital department educational program development that this project comes to life.

Physical Therapy, Occupational Therapy, and Speech and Language Pathology and Audiology comprise a Physical Medicine Department familiar to the author. The Physical Medicine Department is responsible for the complete rehabilitation of patients with diagnoses ranging from pneumonia and asthma (lung disorders) to total hip replacements and total knee replacements (orthopedic

surgeries replacing major joints of the lower extremities). Each therapy specializes in one area of rehabilitation. For example Speech Therapy involves instruction in swallowing and speaking. Occupational Therapy teaches patients Activities of Daily Living (cooking, dressing, and bathing) as well as develops and refines fine motor skills. Physical Therapy evaluates and treats patients with deficits in gross motor activities such as bed mobility (rolling and scooting), transfers (moving from sit to and from stand), and gait (how a person walks).

Each discipline individually is a powerful force in the rehabilitation process. Combined, however, the Physical Medicine Department strives to guide the patient effectively and efficiently to an independent level of function or level of function equal to or better than that of his status prior to admission.

When searching the hospital records of diagnoses throughout the site hospital from September 1994 to March 1995, the author found that pneumonia, chronic heart failure, cerebral vascular accident (stroke), hip fractures, and chronic obstructive pulmonary disease (breathing problems) were the top five most common diagnoses encountered. An interview with the Director of Physical Medicine at the site hospital showed the percentage of orthopedic patients, those with bone and joint problems, equaled nine percent of the entire population in the

same six month period.

The number of patients with hip fractures and other orthopedic patients in the hospital at any one time strongly suggest to the author the need for design and promotion of programs directed to the well-being and satisfaction of the orthopedic patient, the patient's family, and the patient's friends.

With this in mind, the mission statement, target market, and history of the site hospital will be discussed briefly.

"Our Lord Jesus Christ, suffering in the persons of a multitude of the sick and infirm of every kind seeks relief at your hands."

Bishop Claude M. Dubuis
Galveston, Texas 1866

Three French women responded to these words sent by Bishop Dubuis in 1867 to care for the plague-stricken poor of his diocese. This was the seed from which grew the Congregation of the Sisters of Charity of the Incarnate Word. In 1933 the Sisters were asked to assume sponsorship of a Midwest hospital which had closed three years earlier due to financial problems. In 1949 this facility reopened under the supervision of the Sisters of Charity of the Incarnate Word.

Today, this 340-bed hospital provides core diagnostic and therapeutic services to assist in fulfilling the health care needs of this Midwest area and

surrounding suburban communities, focusing its care on the geriatric population:

> As a community service organization focusing on service to adults, especially the older adult of the Saint Louis Community, Incarnate Word Health Care, sharing the mission of the congregation to the healing presence of Jesus Christ, the Incarnate Word, is committed to providing a continuum of services which respond to their needs.
>
> The ministry of our health care community reflects our commitment to excellence in patient care, to the dignity of the individual, to the sacredness of human life, and to Christian service to our patients, their families, visitors, and to each other (mission statement, Incarnate Word Hospital).

It would appear that serving a geriatric population demands different approaches and concepts than serving a general population. Nowhere is this more obvious than by looking at stressors in people's lives. A child's largest stress may be getting a shot at the doctor's office or dealing with the bully at school. Entering adulthood, through retirement, jobs, family, and security may qualify as the largest stressors in one's life. As people enter their "golden years," from sixty-five on, the death of friends and spouse, money to purchase food and medications, and the declining state of their own health become increasingly stressful. Because of these various factors, any patient in a hospital setting must be dealt with on an individual

basis. This is not to say a thirty-five year-old man with prostate cancer would get better or different care than a seventy year-old man with the same diagnosis. It is to say, however, that their needs will probably be different and must be addressed in different manners.

To better understand how people cope with stress as adults and how to assist people to cope with this stress, one might first look at how it is approached with children. Children are taught to cope with stress through educational experiences in school as well as in life. As an example, Robert Furman, M.D., Director of the Hanna Perkins School and the Cleveland Center for Research in Child Development was eating lunch with four preschool-aged children. Lunch was interrupted by two policemen and a little boy appearing to be four or five. This caused quite a stir. The head teacher discovered that the policemen had found the boy wandering about the street near the school and assumed he was one of the school's children. The police were informed the child was not enrolled in the program and went on their way (Furman 33).

The teacher had many avenues by which she might have dealt with this situation. Primarily, she could have hushed the children back to lunch and ignored the very scary implication of the lost child. Instead, she chose to discuss the

situation with the children. The discussion evolved as follows:

> My that was some surprise, wasn't it?" Then she turned to the most concerned child and asked, "What did you think about that, Jim?" "It scared me," he replied. When asked why, he continued, "Was that boy bad? Is that why the cops had him?" The teacher explained the reality, that he had been lost and that the police were trying to help him. "Will they hurt him?" was the next question, and the teacher repeated that they were trying to help him. After a bit of silence, one of the boys asked, "Where was his mother?" ... The questions continued, and a lively discussion ensued with many good suggestions (Furman 33).

> A stress was imposed on the class by the appearance of the police and the lost boy. Instead of ignoring it, the teacher got the children to say how they felt about it, and what they thought about it, before reviewing the reality with them. Then she made a good educational experience out of the episode (Furman 33-4).

Certainly discussing children coping with the stress of a lost boy may appear somewhat unsubstantial to this case. But looking further into the story, the author feels some valuable real life lessons can be learned. If one looks at every stress in the way this one was, there will usually be a learning situation to be found because stresses are an unfortunate but unavoidable part of life. However, for two reasons, stresses are best managed by not avoiding them. First, they offer important opportunities for learning experiences, and secondly, their management

can remove the interferences they might otherwise impose on a situation.

The author would like to present a scenario demonstrating a possible patient sequence. A seventy-five year old male patient hobbles into his orthopedic surgeon's office for a routine check-up. He knows his right hip has been becoming progressively more painful in the last three months and his prescribed arthritis medication is not removing any of the pain. The doctor enters the room, looks at the x-rays that were taken one week prior to this meeting and states without hesitation: "You need to have your hip replaced. Your present hip joint will not last another year. Take this medication for two weeks and schedule the surgery with my secretary. You'll be in the hospital about four to six weeks after the surgery and you'll return home using a walker to assist you while walking around the house."

This may appear exaggerated, but unfortunately, this type of discussion between doctor and patient can be commonplace. Little information is given to the patient concerning the surgery. At best a pamphlet might be offered, to be taken home to read about the procedure. For most people this situation would qualify as a stress in life. If his hip had been broken and emergency surgery was needed it would be a different stress. Now he is electively having his hip replaced, and he

must have it done within two weeks. As the time grows nearer to the surgery the patient is asked if he would care to donate his own blood for the surgery; another stress!

Finally, just days before the hip replacement occurs, the physician must inform the patient of all risks involved with the procedure such as blood loss, pain, paralysis, and possible death during or up to six weeks after surgery. The patient must then give consent to the doctor to undergo the procedure.

The man now sits at home with his small dog, lying on the couch thinking about all of the stress that he has incurred in the last two weeks. He calls a few friends who have had their hips replaced, and they give him some basic tips on therapies, pain levels , and return to home. However he remains confused and quite frightened of the procedure which is to be completed in the morning. He retires to bed not sure what his immediate future holds. This scenario demonstrates the fear, anxiety, and stress an elective orthopedic surgery can hold for a patient.

To decrease the stress a patient feels before and during a hospital stay appears essential for the best outcome for the patient at time of discharge. The obvious question remains: how is it possible to decrease stress for patients of

elective procedures such as total hip and knee replacements? The answer: present appropriate information by developing a pre-total joint replacement education class with the collaborative efforts of hospital management, physicians, nurses, and therapists.

Adults learn best when they realize a lack of what they want to know and what they actually know. It is also a strongly held belief that adults learn best in groups, allowing them to ask questions well before stress is placed on them (Knowles 29-30). This would suggest that adults learn at the highest motivational level during times of stress and crisis. Brundage and Mackeracher state in their writings that teaching plays a large part in the learning process of adults. They agree with Knowles in that adults learn best at times of emotional stress and anxiety and should receive education at such times(27). By meeting the stress "head on," through listening to thoughts and fears and then educating the patient with facts, anxiety should be reduced to allow for a better informed client knowledgeable in regards to procedures, and better prepared for the changes that are about to occur in his life.

Keeping this in mind, the more comfortable and less anxious a patient is when entering the hospital, the more there should be a direct effect on ease of

transitions within the hospital leading up to his discharge. Of course this assumes an uncomplicated surgery and recovery process for the average patient.

Along with easier transitions in the hospital is the concept of shorter length of stay on any given unit of the hospital. It is the author's contention that, more specifically, elective joint replacement orthopedic patients who undergo preoperative education offered through the pre-joint replacement education program should show a significantly lower length of stay on subsequent units within the hospital with professional collaboration of the process.

From a revenue aspect this decreased length of stay on acute care is critical at this time for immediate hospital survival. Fewer days spent on acute care units becomes more cost effective for hospitals as insurance companies, specifically Medicare, have set up Diagnostic Related Groups (DRG'S) allotting a given number of days per patient diagnosis for which they will reimburse the hospital. For example, patients with hip fractures are allotted six days on an acute care floor. If the patient is on an acute care hospital floor past the number of days prescribed by the insurance company, the hospital will not be reimbursed for those days(James 3-4).

Decreasing length of stay on other units such as skilled nursing facilities or

rehabilitation units is important for long term hospital viability as well. With new health care legislation coming quickly into being, major changes to the present systems will be inevitable. Insurance companies are beginning to capitate, that is, put a cap on the dollar amount given to hospitals per procedure regardless of days in the hospital. These same insurance companies are looking to find the shortest length of stay prior to discharge for contracting services between hospital and insurance company to alleviate some cash expenditure.

In light of these facts, one can easily see the need to develop such an education program as the pre-total joint education program. First is the need for patient transfer from acute to skilled nursing or rehabilitation unit in a shorter time period, ensuring payment to the hospital. Secondly, the patient should be discharged from the hospital more efficiently. More timely discharges also makes the patient, the patient's friends, and the patient's family very pleased. This keeps the hospital on good terms with the patient who may need to return to the hospital in the future for other medical problems. The insurance companies also appreciate the early discharge, keeping terms friendly and in good-standing between the two parties.

At the present time, the site hospital has no such program in place or in the

process of being developed. The author feels that by developing such a program, several people/ groups could reap very real benefits. First and foremost, the patients of the hospital would benefit. They will have a shorter hospital stay resulting in less interruption of their lives as well as a decreased chance of nosocomial infections (infections incurred secondary to being in the hospital) because of a reduced window of contact with other patients who are ill. Another benefit to the patient is a higher independence level attained earlier from pre-admission therapy education, and an increased chance of being discharged from the hospital before their Medicare payment level changes - after day twenty-one on a skilled nursing unit, a co-payment is required(from 1996 Medicare Guidelines).

In the second instance, the Physical Medicine Department benefits. An educated patient who understands what is expected of him throughout his stay should be more receptive and responsive to therapies leading to less refusals of treatments. A decreased number of patient refusals leads to an increased number of work units produced by each therapist, leading to increased revenues for the department. Also, a patient who understands why he is in therapy makes the therapist's job much more enjoyable. This can be viewed as positive for the department as well, because a pleased employee is, in all likelihood, a retained

employee.

Finally, decreasing length of stay provides an avenue for hospitals to increase their financial performance and can be indicated for individuals concerned with cost-effective use of Physical Therapy and Occupational Therapy, especially with reimbursement systems in place, such as Medicare Diagnostic Related Groups (DRG's) and Capitation programs. Also important from a hospital administrative stand-point is the fact that a decreased length of stay frees a bed earlier and may provide an opportunity for the hospital to increase admissions, thereby further increasing revenues.

In the author's view, creating and maintaining such a fundamental education program should surely bring about positive results for all parties involved. Indeed, returning to the previous example of the gentleman needing a total hip replacement, a new scenario might be described:

The man comes home from the doctor's office with the understanding he must have hip surgery. He also has a pamphlet from the hospital's Physical Medicine Department describing an education program offered at his convenience. After calling for information, he learns transportation to and from the hospital as well as the education course is free of charge.

This gentleman goes to the course and learns what exactly will occur during his hospital stay from admission through discharge and return to home. He learns what the surgery entails and how therapies assist in recuperation. He asks questions of the instructor and receives answers that help alleviate anxieties and fear. The man receives instruction in simple leg exercises designed to increase strength prior to surgery. Finally, he takes a short tour of the hospital showing him a room as well as the different floors of the hospital to which he will transfer as he progresses in recuperating.

The same man now sits at home much more comfortably with greater knowledge of exactly what his immediate future holds. He completes the exercises prescribed by the physical therapist and goes to bed confident that everything will turn out for the best.

Chapter II

LITERATURE REVIEW

Gone are the days when patients were admitted two or three days prior to surgery for preoperative preparations. The current health care system demands that hospitals shorten patient length of stay without compromising care. As a result, surgical patients undergo multiple procedures on the day of their admission. Many have laboratory tests, while others require special skin preparation. The evening before surgery, patients are bombarded by visits from their surgeon, anesthesiologist, house staff, and nurses, all seeking various types of information. In addition, patients are expected to adjust to a new environment over which they have little to no control. Thus, the admission process frequently increases the apprehension already experienced by the patient.

Along with increased apprehension comes decreased control over autonomy. The patient is led through the hospital from the X-ray Department to the laboratory and Respiratory Therapy all within two hours of waking. This routine leads to physical and occupational therapies beginning later the same day for some patients. One can easily comprehend why some patients may refuse to attend therapy sessions; yet to improve their physical and medical status, patients

must attend physical and occupation therapy.

The goal of preoperative teaching is not merely to decrease anxiety levels of the patient, but also to increase compliance with therapies and therefore, decrease the length of stay in the hospital. Julia and Shirley Wong discovered that patient compliance the therapy improves using appropriate strategies of preoperative learning. They discuss a carefully designed educational program that incorporates the principles of learning used in conjunction with the selected behavioral strategies which not only increases patient knowledge about their illness, but also enhances their desire to comply (112).

Adding to the challenge of a shorter hospital stay is the decrease in opportunities to teach patients. Fewer teaching opportunities may mean that patients may be physically or mentally compromised during the allocated teaching slot. This of course lends itself to an enormous challenge to patients ability to care for themselves after discharge from the hospital. Unfortunately, Physical Therapists typically have only short stints of time available during which they attempt to teach before being interrupted by other responsibilities. Complicated discussions such as anatomy of the hip joint or proper use of assistive devices require uninterrupted time to establish a receptive frame of mind for learning. The

proper learning environment is also essential; a rushed chaotic venue does not lend itself to beneficial learning.

Rifas, Morris, and Grady state that staff therapists are generally not well acquainted with adult learning theories. This deficit can be traced to an educational preparation where little attention has been paid to teaching how to teach. So while supporting the concept of patient teaching, many therapists cannot distinguished between "teaching" and "telling" patients how to do techniques. They equate teaching with telling (215).

Rifas, Morris, and Grady also identify the problem of therapists using medical jargon while teaching patients. Because jargon is so entrenched in health care, the need to translate is grossly underestimated (215). For example, a Physical Therapist may use the phrase "Now we'll look your leg up to this machine and move your muscles withe electric stimulation." This is a harmless non-invasive electrical current that feels similar to the sensation of an extremity falling asleep. To patients however, the phrase may conjure up images of a certainly painful experience - electrocution!

With the obvious need for education of patients ever present, development of such educational programs appears nothing less than essential. One poll

conducted in December 1994 revealed that patients are ignorant of their own health care. About one-half of the patients rated themselves as being generally informed about personal health care and medical issues, but one-third said they felt better informed about buying a car ("Poll Finds Patients Not Informed" 2).

In the same article, Dorothy Drugger, M.D. is quoted as stating people seem to desire more education regarding specific health care problems today. This equates into both a challenge and an opportunity for health care providers, employers, and insurers to develop appropriate educational programs ("Poll Finds Patients Not Informed" 3). The Atlanta Arthritis Foundation states that patients facing joint replacement surgery can make their recovery smoother and quicker with proper preparation reducing hospital stays by one-half. At the same time, such preparation can lower medical costs and improve quality of care, according to Arthritis Today, a foundation publication ("Prepared Patients Back From Surgery" 3).

Realizing that education is necessary to assist patients through the surgical procedure and following therapies appears extremely important. The question of how to deliver such preoperative education remains. Malcolm Knowles believes that adults are motivated to learn when they recognize a gap between what they

know and what they want to know (50). This would suggest that adults are especially motivated to learn during times of crises. Other educational principles suggest methods that affect the retention of information by the adult learner in times of illness. Combining written and verbal instructions has been demonstrated to be superior to using either alone in producing retention (Wong and Wong 112).

Several studies have been completed to determine the most optimum time to deliver this written and verbal communication. Lichtenstein, Semaan and Marmar believe the best time is four days prior to admission to the hospital(18). Other results determined by Lepczyk, Raleigh and Rowley found no differences in anxiety levels or knowledge gained. Seventy-two patients attended preoperative instruction either as an inpatient the day before surgery or as an outpatient four to eight days before surgery. Anxiety and knowledge levels were measured before and after class and the evening before surgery. No differences were found between the groups on a measure on anxiety levels. Both groups demonstrated a moderate anxiety level with no significant change over the testing period. These results suggest it makes little to no difference whether patients receive information up to a week before surgery or just the day before surgery (305). Rice and Johnson completed a similar study resulting in the same outcome: patients may

receive information up to one week prior to surgery or the day before with little difference in amount of knowledge gained (150).

Regardless of the exact timing of preoperative education there remains the ever-apparent need for it. This education appears essential not only for most types of patients, and certainly - as the major focus of this study, that of the orthopedic surgical candidate. Kosik and Reynolds found that patients exposed to a preoperative teaching program ambulate sooner after surgery, use less pain medications, and have fewer medical complications. This evaluative study demonstrated that patients who attended the group project also spent fewer days post-operatively in the hospital than did a control group (21).

Before any education program for patients becomes established, the integrator should explore and comprehend basic concepts of teaching and learning as fully as possible. It is not enough to state that patients learn information through rote memorization skills; one should be familiar with how people learn from the very beginning.

Several theorists have achieved fame for their in-depth searches into how humans develop learning skills from birth through adulthood. These founding fathers of development date back to the early eighteenth century with Jean Jacques

Rousseau and Johann Heinreich Pestalozzi. Both men believed that children learn through their senses and by actively participating in their learning environment. More directly, children learn by doing (Rousseau, J. 18-9 and Gutek, G. 9-12). John Dewey began the early education development force into the nineteenth century. Dewey theorized children learn by experiencing. He also stated children should tackle many cooperative projects in order to stimulate their young minds into a proper learning development (Dewey, J. 7, 25-31). Jerome Bruner is recognized as an authority of the twentieth century. Bruner believed children learn best when educators make the students self-propelled thinkers, actively inquiring into their own learning (Bruner, J. 11-6). All of these men laid foundations for early childhood educators to reflect upon and metamorphise into better teachers. However two other authorities, Jean Piaget and Erik Erikson, developed the concepts which are most commonly quoted and practiced in the early childhood education centers today (from a personal interview with Karen Delaney, M.S.Ed.).

Piaget and Erikson believed children must construct their own learning so as to have meaning to them. Both men also enforced concepts of children as active learners. They felt that to teach, educators should allow individualized learning in conjunction with aspects of social interaction. Erikson also brought

emotional aspects into the learning process.

By combining the thoughts of all the great minds in early education development, it would appear that children learn best through their senses, by actively participating in cooperative activities, and by inquiring into their own education. When the education is individualized and when emotions are intact for proper learning, children will also glean knowledge. Because learning for the young child requires a pairing of mental manipulation with physical manipulation, teachers make themselves available as facilitators and consultants. In this role, the teachers observe, listen, and respond to questions, thereby helping young children interpret what they are experiencing (Piaget, J. 3-4 and Erikson, E. 32, 36-8). With this information of how children learn, the author feels that with only minor adjustments, these data may be applied to the geriatric adult learning process.

It is the author's contention that understanding education for older persons is akin to unraveling a magic skein of wool; as one unravels, the wool changes in color and texture. One can see the finest delineations of structure and form and admire the length and wholeness. Indeed, in trying to understand older adult learners, one sees that individual intricacies emerge, color and content change and

texture is transformed. Yet the long and complex strand is all of one piece; there is an unmistakable unity. If today's hospital and other medical institutions are to serve and teach older adults, they must first be able to appreciate and adjust to the various strands of their lives and how those strands were acquired through education and learning.

In order to help the geriatric client learn most effectively, Dennis Sparks, who serves as the Executive Director of the National Staff Development Council, Believes the instructor should familiarize himself with and have a strong comprehension of the seven-step process that defines how adults learn. As the list progresses, one can note the numerous similarities between the child and adult learning process:

1. Adults learn best by solving realistic problems.

   Adults are interested in learning how to cope with the problems they face now. Learning should therefore be practical.

2. Adults learn best by doing.

   Listening and watching are fine, but putting the knowledge to use is the real learning. Therefore, opportunities for involvement and experience through use of exercises and

discussions should be used. Learning is an active process.

3. Adult learning is a complex process involving the whole person. Relating experiences to the person's own needs will help them discover where the new information learned will them in their activities of daily life.
4. Adults learn best in informal situations with mutual respect between trainers and learners. A good learning environment is crucial. An informal atmosphere encourages high involvement.
5. Adults learn best when they have a role in planning their own learning.
6. The most effective teacher role with adults is not transmitting knowledge, but rather facilitating self-directed or mutual learning.
7. The most effective learning occurs when the student is actively involved in the learning process. This can be accomplished through case studies, role playing, exercises, experiments, and

hands-on learning (51-2).

Hopefully, all learning efforts arising in the health care field are well grounded in the whole adult learning process itself. Producing and instituting a pre-operative education series should prove beneficial to the parties involved. Patients should benefit, in a variety of ways, starting with a shorter hospital stay, resulting in less interruption of a patient's life. Hand in hand with an abbreviated length of stay is a decreased chance of nosocomial infections, which are those illnesses which can be acquired during a stay in the hospital, secondary to reduced windows of contact. Patients may also achieve a higher independence level more quickly because more therapies will occur within a shorter time frame. Finally with the inclusion of sound preoperative education, a more confident and relaxed patient should lead to a better outcome in patient satisfaction surveys and probable return patronage to the hospital.

Hospitals should also benefit from such a program through two main channels. First, patients should feel they are moving toward a more functionally

independent level by transferring swiftly from acute care floors to sub-acute care floors, skilled nursing units, or comprehensive medical rehabilitation units. This would tend to make the patient/ customer happy. A happy customer would generally be a return customer. Secondly, and more importantly from a business aspect, a shorter stay on an acute care floor could lead to increased numbers of patients on other units. This in turn should lead to more revenues from governmental and for other secondary insurance payment sources.

Today it is more important than ever for the patient to become involved in his own health care and, especially to be fully prepared for surgery. Because the patient is the "consumer" and the health-care team the "provider," it is necessary that the team work together to provide the patient with adequate knowledge about diagnosis, surgical procedures, and management of care. The desire for increased knowledge seems to be a growing trend for the patient, and therefore unveils a need for both alternative and combined methods of teaching provided by health-care professionals. This pre-operative teaching class presented in this effort with individualized instruction offers one approach for more effective patient teaching. This type of program should benefit all included with maximal effectiveness achieved through the three "Cs" of coordination, communication, and care.

Chapter III

METHODS AND EVALUATION

Establishing the necessity of a pre-total joint replacement education program requires the development of such. Prior to its conception, the true distresses of the orthopedic patient must come under investigation by interviewing orthopedic doctors. A list of topics pertinent to patient concerns with total joint surgery may then ensue. Following the birth of this list comes the creation of the program brochure and finally, the narrative/ written program itself.

After interviewing two orthopedic surgeons at the site hospital for ideas on what primary concerns and complaints their patients undergoing total joint replacement have, several issues were listed. Patients asked for demonstrations of the procedure with pictures and wanted to see the actual prosthetic device that was to be used in surgery. Secondly, they wanted an exact protocol for the doctor, from day one through discharge from the facility and transfers from one floor to another. In addition, the patients desired information on anticipated pain level after surgery as well as how much therapy was involved through recovery. Other important issues such as limitations and precautions, adaptive equipment, therapy after discharge, and a question and answer session

were agreed upon as necessary topics to discuss with patients in this class. From these meetings, the following list emerged as program topics to consider:

1. demonstration of hip/ knee prosthesis with pictures and actual prosthetics;
2. in house transfers from acute to subacute, skilled nursing, or comprehensive medical rehabilitation units;
3. anticipated pain level following surgery;
4. limitations and precautions with new joints;
5. adaptive equipment and assistive devices required after surgery;
6. expectations Physical Therapy has for patients such as forty-five minute sessions twice daily and necessity to attend all sessions;
7. discussion of Physical Therapy after discharge from the site hospital, what it entails, and approximately how long it will continue;
8. safety tips for return home;
9. exercises to be practiced prior to surgery for added strengthening of patients lower extremities;
10. a question and answer session for the patient to express any

concerns with the upcoming procedure with optional hospital tour;

11. introduction of questionnaire for quality assurance purposes.

With class topics thus identified, a brochure was compiled. The pamphlet delivers information on who should attend the program as well as the length of the program. Those interested are familiarized with basic ideas discussed in each session, times classes are held, and how to arrange transportation to and from the hospital if necessary. A contact source is listed on the back cover for those desiring more information or answers to questions on the program. (See Appendix A).

As brochures were developed, so did the narrative/ written portion of the program. It begins with an introduction and welcome statement followed by basic education in anatomy and goals of such a surgery, as well as the purpose of therapies and machines used after surgery. A comprehensive rehabilitation schedule is discussed as well as a brief overview of transfers from one unit of he site hospital to another unit. A list of exercises to practice prior to surgery is given to each patient and finally, discharge planning is reviewed. Each person receives an information folder that includes all pertinent paperwork to the course. To view this packet, refer to appendices B through P. The narrative portion of the course

follows.

OPENING WELCOME

Welcome to Getting Ready for Total Joint Replacement Surgery. We want you to relax and be comfortable while we familiarize you and your family on the highlights of your upcoming surgery. We will attempt to give you an overview of what to expect from your surgeon, your nurses, your physical therapists, and other health care professionals who will be caring for you during your stay in the hospital. There will be a question and answer session at the end of the program, but please feel free to stop us at any point along the way if you have a concern or question. Your participation in this class should help to better prepare you for total joint replacement, and what you might expect each day of your recovery. (A short welcoming statement may be viewed in Appendix B).

Your health care providers feel the program and information included is important to the ultimate success of your surgery and rehabilitation, our ultimate goal being your return to independence as soon as possible.

Most joint replacements are done because of arthritis. There are three types of arthritis: rheumatoid arthritis, osteoarthritis, and traumatic arthritis. Your surgeon has probably discussed with you which type you have and why this

surgery is necessary. A total joint replacement is a surgical procedure where the arthritic joint surfaces are resurfaced and prosthetics are placed in the joint as shown in your handouts (Appendices C and D).

There are three goals of any total joint replacement:

1. to relieve pain;
2. to restore loss of function;
3. to improve quality of life;

The primary benefit of total joint replacement surgery is pain relief. Fortunately, the pain relief felt days after surgery may be quite dramatic. The pain experienced immediately after surgery is generally from the surgery itself and the incision site, which is to be expected. Restoration of movement and muscle strength requires exercises and activity after surgery. This activity is known as physical therapy and is essential for a full post-operative recovery.

Before you are ready for your surgery, your surgeon will want to do some pre-admission testing to make sure you are qualified to undergo the procedure. These tests may include, but are not limited to, blood work, electro-cardiograph, and urine samples. A chest x-ray may also be requested. All of these test results will be at the hospital for the doctor to review prior to the operation.

When the surgery is complete, your surgeon will come to the waiting room

to discuss your condition with your family. You will be taken to the Intensive Care Unit for recovery for approximately two hours. Here you will be closely monitored until you are responsive from the anesthetic. When your vital signs are stable and you are sufficiently recovered, you will be transferred to your new room assignment on the third floor.

PAIN CONTROL

Pain control is of the utmost importance to your recovery process. Pain medications will be given to you prior to Physical or Occupational Therapy so that you will be able to perform the prescribed exercises. Because pain is very individualized, your nurse will check with you regarding your comfort level. Although the nurses will provide pain relieving medications according to your surgeon's orders, you may ask for pain medications when you feel you need them.

Patients are encouraged to sit up and eat in a chair whenever possible, this aids in digestion and helps prevent nausea. Often times patients will experience constipation post-operatively due to anesthetics, inactivity and pain medications. Sitting up, in combination with stool softeners or other laxatives as prescribed by your surgeon, will help avoid the discomfort of constipation.

TOTAL KNEE REPLACEMENT

Total knee replacement success following surgery is dependent upon several variables, three of which are your surgeon, exercise and therapy. Many surgeons will order the use of a Continuous Passive Motion Machine - CPM for short. This machine is attached to the patient's bed and is used as ordered by the surgeon. The operative leg is placed in the sling of the machine and is mechanically fixed at the knee according to the degree of flexion ordered and the tolerance of the patient. Each day the flexion of the knee is increased by ten degrees. The patient generally stays in the CPM for two hours at a time during the day and all throughout the night.

CPM treatment is comfortable. The unit is lined in lambswool, and the movement is slow, smooth, and quiet. The CPM will slowly bend and straighten your hip and knee. The benefits of CPM are decreased pain, decreased stiffness, and improved circulation.

TOTAL HIP REPLACEMENT

In the recovery room, after total hip replacement, a triangular pillow called an abduction pillow will be placed between your legs to keep your new hip joint in

proper alignment and to prevent dislocation. You must keep your legs separated, uncrossed at your knees and ankles, keep your feet pointed at the ceiling or turned out, and avoid sitting up at a ninety degree angle. Use an elevated toilet seat to decrease the angle of hip flexion while using the commode. Please see handouts 2 and 3 (Appendices E and F) for a review of these precautions.

REHABILITATIVE SERVICES

There are two primary rehabilitative services you will be receiving following your surgery: Physical Therapy and Occupational Therapy. There are handouts in your information packet on both these therapies. Please look at them now (Appendices G and H). Physical therapy focuses on strengthening your muscles that have undergone surgery. Your therapist will design an exercise regime for you to follow every day to increase the strength in both legs. Physical therapy also increases your independence level in areas of bed mobility, how you get in and out of bed; transfers, how you get in and out of a chair; and ambulation, how you walk. Occupational therapy focuses primarily on your activities of daily living or ADL's. Such activities include how you transfer to and from the commode, how you bathe, wash your hair and brush your teeth. Occupational

therapy also assists you in new ways to prepare your meals, get dressed, and generally take care of yourself after you return home with your new limitations from total joint replacement.

Both physical therapy and occupational therapy are extremely important to your full recuperation. Your therapists will guide you in exercise programs for both the hospital and home use. Usually physical therapy sessions are scheduled twice daily for forty-five minutes each. You will also receive occupational therapy twice daily with forty-five minute sessions. We encourage you to rest between sessions so you are not overtired. Each day of therapy has increased expectations. You will progress daily with help and encouragement from your medical team.

ASSISTIVE DEVICES AND ADAPTIVE EQUIPMENT

Generally your physical therapist will instruct you in how to walk with a walker for several weeks after your surgery. This is to give you added support while allowing the operated leg to accept more weight gradually. Your occupational therapist will teach you proper techniques of using such adaptive equipment as long-handled bath sponges and bathtub-transfer benches to assist with bathing, long-handled shoe horns to help in donning your shoes, and reachers to assist in picking objects off the floor. All of the devices given to you by your

therapists should be used throughout your hospital stay and at home until your doctor, physical therapist, or occupational therapist tells you differently.

DAY OF SURGERY ADMISSION

Please arrive on time to the same day surgery department. You will be given a room where you can change into a hospital gown and rest before surgery. Your family may stay in the room with you. Bring only necessary items to the hospital with you. Toothbrush, toothpaste, mouthwash, hairbrush and comb and any other toiletries you may need should be brought with you. You will also need a short robe which opens up the entire front. Non-skid flat slippers are recommended. A pair of non-skid walking shoes will be needed for physical therapy. Any walking aids you were using prior to surgery should be brought to the hospital labeled with your name. You may wish to bring books or magazines to read. For more information, please see the handout labeled What to Bring to the Hospital (Appendix I).

Please bring a list of all medications you are presently taking at home with the correct dosage included. We encourage you to leave all of your medications at home. Any medications your doctor wants you to have will be prescribed for you

in the hospital. The nursing staff will dispense these medications as they are prescribed.

Before your surgery a nurse will have you sign a consent form for the operation. If you have a living will or advanced directives, please give them to the nurse at this time. These will becomes a part of your hospital chart.

The operating room staff will come to your room and assist you onto a cart to take you to the operating suite. At this time your family will be directed to the surgical hospitality suite where they may wait for you during the operation. After approximately a two hour visit in the recovery room/ I.C.U., you will be transferred to the third floor.

The nursing staff on the third floor are specifically trained to care for the orthopedic patient. They are experts at moving and transferring patients safely and comfortably. The staff is experienced in knowing how to handle patients with prosthesis and are knowledgeable of your specific doctor's routine. They will assist you with all aspects of nursing care and will encourage you towards independence as soon as possible. Your rehabilitation depends on you doing as much for yourself as quickly as possible. We are always there for your needs, and we are extremely cautious for your safety. We ask that you call for help until you have been given the go-ahead for independent transfer and ambulation.

The nursing staff will tell you each day what to expect and the times you will be in physical and occupation therapy. Physical and occupational therapies are of the utmost importance and sessions are very tightly scheduled. It is vital that you attend both physical and occupational therapy.

The routine on the third floor is fairly consistent from day to day. Your physical and occupational therapy times will be designated by the therapy department; both therapies are twice daily. Each morning you will be assisted with morning care by a nurse or nurse assistant. They will have you ready and up in a wheelchair for you to be transported to the physical therapy department which is located on the fourth floor.

Pending individual progress, approximately four to five days after your surgery you will be transferred to the subacute unit, the skilled nursing unit, or the comprehensive medical rehabilitation unit for the completion of your stay at the hospital.

When you have graduated in therapy for the use of a walker, you should use the walker to go from the chair to the bathroom and back. At first you may need some assistance, but as you become more confident you will be able to walk unassisted. It is strongly recommended that you sit up in a chair for your meals. This helps to decrease nausea and promotes better digestion. Spending time out of

bed decreases the risks associated with bedrest and helps with breathing, circulation, endurance, and strength plus psychological benefits.

Most patients will be wearing long, white, elastic stockings which promote good circulation to the legs. These stockings are snug fitting and will be removed by your nurse daily. Periodic blood tests will be done after your surgery to make certain your blood levels remain at healthy levels. These test are necessary to prevent anemia, a condition where your blood does not have enough red blood cells which carry oxygen to the muscles, and blood clots which may occur after joint replacement.

We realize that surgery is never easy and total joint replacement is quite an endeavor. We are here to help you get through the surgery and on your way to a much more comfortable and active lifestyle. We want you to do well and play as active a role as possible in your recovery. Please feel free to ask questions of any of your doctor or any of us on the rehabilitation team.

DISCHARGE PLANNING

An important part of total joint education is discharge planning. The hospital provides a safe, structured environment for patients, but when the patient is to be discharged to go home, many feel apprehensive and unsure. This

hospital's Social Services Department and your physician begin discharge planning the day you are admitted to the hospital. Each day of hospitalization your doctor reviews your status with the nursing staff and the physical and occupational therapists. He charts your progress and your recovery level. A case worker/ social worker, will be contacting you in the hospital to oversee your home needs.

Often times patients may require extended physical therapy in a non-acute hospital setting. This may necessitate you being transferred to the Subacute Unit, the Skilled Nursing Unit, or the Comprehensive Rehabilitation Unit at the hospital. The Home Health department may also assist you if home care is ordered by the doctor. You will be given instructions by the physical therapy department on home exercises. This is all pre-arranged by the hospital staff for your convenience. Please know that we are here to make all transfers smooth ones.

The nursing staff will give you both verbal and written discharge instructions before you leave the hospital. These instructions will cover activity, follow-up doctor appointments, and home medications.

GENERAL DISCHARGE INSTRUCTIONS FOR PATIENTS WITH TOTAL JOINT REPLACEMENT

1. Continue to use a walker or crutches when you walk.
2. Continue wearing elastic stockings at home until your follow-up visit with your surgeon. If you were not wearing stockings in the hospital, disregard this instruction.
3. Be sure to rest between periods of activity. Do not become overtired. Gradually increase your activity at home. Do not lift,strain or overdo.
4. Notify your surgeon if the following occurs:
    a. You run a fever of over 101
    b. You experience unusual pain in the calf
    c. You notice sudden pain or swelling at the incision
    d. You observe a change in the color or odor of drainage from your incision
5. Take the prescribed pain medication as directed. As the discomfort lessens, you may not need pain medicine at all.
6. Eat a well balanced diet. Protein and Vitamin C are essential in promoting healing.
7. Avoid constipation. Eat foods high in fiber and drink plenty of fluids. You

may need a mild laxative while taking pain medication.

This list of discharge instructions can also be found in your folder (Appendix J).

It is not uncommon for people to encounter problems in their homes upon their return there. Some of the most common problem items are:

1. Throw rugs and extension cords are easy to trip over, so removing all throw rugs and taping down all extension cords is recommended.
2. Furniture that is low, soft or has wheels is difficult to get in and out of. We recommend you avoid these types of chairs. Utilize chairs with armrests to aid in leverage; for low chairs add a cushion or pillow.
3. Standing to shower requires a lot of balance and energy, therefore you should sit on a tub seat to shower and use a hand held shower.
4. Steps without rails can be difficult to ascend and descend. If possible, add railing along at least one side.

For further listings of recommended changes for your home, refer to the handout in your folder/ information packet (Appendix K).

Before we conclude our session today, I would like to take a few short

moments to instruct you in a basic exercise program that you can do on your own time for both of your legs prior to your surgery. These exercises serve a dual purpose. First, and most obviously, the exercises will increase strength in your legs. Secondly, they will help increase circulation to both of your legs which will aid in the healing process after your surgery. There are eight exercises in all, and take approximately twenty minutes to complete. Let us discuss these exercises now.

1. Ankle Pumps: Move your foot up and down keeping your toes pointed. Do twenty repetitions.
2. Quad Sets: Lie on your back with knees straight. Push the knee down into the bed, tightening the muscles on top of your thigh. Relax. Repeat twenty times.
3. Glut Sets: Lie on your back. Squeeze your buttock muscles together. Repeat twenty times.
4. Windshield Wipers: Lie on your back with knees straight. Move one leg out to the side then back to the middle. Do not cross leg past the middle. Repeat twenty times.
5. Heel Slides: Lie on your back, bend your knee and slide your heel up the bed. Do not bend your hip past ninety degrees. Repeat twenty times.

6. Terminal Knee Extension: Lie on your back and place a small tower or blanket roll under your knees. Straighten your knees as you lift heel from the bed. Hold five seconds. Repeat twenty times.
7. Straight Leg Raise: Lie on your back, bend one knee up and place your foot on the bed. Keeping your other leg straight, slowly lift your leg up, making sure to lift the heel first. Now slowly lower leg back down. Do twenty times.
8. Bridging/ Fanny Lifts: With roll under your knees pick your hips off the bed. Repeat twenty times.

Do all of the exercises two times a day. Do them slowly, and do not hold your breath. There is a complete listing of these exercises in your folder as well (Appendices L, M, and N). Please refer to the list until you are fully independent with your program. Also, do the exercises in the exact order listed in your folder. This will allow your legs to "warm-up" before having to work too hard.

At this time, I would like to introduce a questionnaire/ evaluation form that you will be asked to fill out after finishing your course of hospitalization (Appendices O and P). It will only take a few moments of your time to complete the evaluation form and will be of great help to us as we continuously try to improve the services we provide in our educational program. Feel free to add any additional comments before returning it in the self addressed stamped envelope.

Please look in your information folder to locate this form.

Right now, I would like to answer any questions and address any concerns that you may have regarding the surgical procedure you are about to undergo.

CONCLUDING STATEMENT

On behalf of the rehabilitation therapy department and the entire hospital family, I would like to thank you for attending this educational seminar. We hope you have learned helpful information to ease your mind about what to expect before, during, and after your total joint replacement surgery. If at any time you have further questions or concerns, please feel free to call me or any of the other therapists at (314) 865-6401, Monday through Friday, 8:00 to 4:30. Once again, thanks for coming! This concludes our program. Have a great day.

Chapter IV

RESULTS

By implementing the pre-total joint education program, the length of stay on acute care floors as well as in hospital length of stay should decrease. Through this decreased length of stay, the patient benefits in two primary ways. First, monetarily speaking, by being discharged before a co-payment for Medicare is due, the patient saves money each day prior to the day twenty-one cut-off. Secondly, from a psychological/ physical standpoint, by being discharged sooner, the patient returns to an independent "normal" life routine and avoids continued exposure to hazards of hospitalization.

From a hospital perspective, shortened length of stay provides an avenue to increased financial performance of the hospital and is indicated for individuals concerned with cost-effective use of physical therapy, especially with reimbursement systems such as Medicare Diagnostic Related Groups(DRGs) and capitation programs. These same individuals also need to be mindful that quality of patient care must not be compromised in the interest of increasing hospital financial performance. Under the DRG system, hospitals receive "x" number of dollars per DRG. Under capitation, a hospital receives "x" number of dollars for

"y" number of patients in a certain group. If the length of stay is decreased, daily hospital revenue is increased.

For a patient with a medical diagnosis of total knee replacement, a decreased length of stay by 2.5 days (currently a 15% decrease) can increase hospital revenue by approximately 18.5%. Similarly, for a patient with a medical diagnosis of total hip replacement, a decrease in length of stay by 1.6 days (currently a 14% decrease) can increase hospital revenue by approximately 16%. For example, total knee replacement times number of dollars is constant and takes 16 days. If the days are reduced to 13.5 days, the percentage revenue increase is illustrated by the equation (16-13.5/13.5)x100. Also important from a hospital administration stand-point is that a decrease in length of stay frees a bed earlier and provides an opportunity for the hospital to increase admissions, thereby, further increasing revenues.

A retrospective chart review search was completed through finding 53 orthopedic patients with physical therapy evaluation orders from December 27, 1993 and discharged from physical therapy services by June 24,1994. Included in the study were: 1.) orthopedic patients whose entire evaluation started on or after December 27, 1993 and were discharged on or before June 24, 1994; 2.) patients whose chart indicated that the patient underwent total knee replacement or total

hip replacement; and 3.) patients who were admitted to the skilled nursing facility or comprehensive medical rehabilitation unit of the site hospital.

Two types of patients were excluded from the study: 1.) patients whose chart did not indicate either total hip or total knee replacement; and 2.) patients whose particular circumstances might give a misleading impression of the "typical" patient. Such a patient may have been discharged to a nursing home quickly and at a very low level of independence secondary to other health problems impacting negatively upon his physical therapy. With these exclusions 38 of the original 53 patients remained in the study.

Tables 1 and 2 refer to the variables obtained from patient records. Four main variables were obtained: 1.) total length of stay on skilled nursing/ rehabilitation unit - labeled SNF/CMR; this is actually the number of days from the initial physical therapy evaluation to the last physical therapy session; 2.) the number of physical therapy sessions attended; 3.) the number of Saturday and Sunday physical therapy sessions missed during stay on SNF/CMR units; and 4.) the number of physical therapy sessions not attended secondary to refusals, illness, hold orders, et cetera. Information regarding patients ages, sex, and diagnoses is also recorded.

With the current system of no pre-operative education administered,

statistical referencing shows twenty to thirty-five percent of the actual available days for physical therapy are not being utilized, secondary to refusal of treatment. This does not appear very efficient. Looking at hospital billing dollars saved, the number of orthopedic patients needs to be annualized. Because there appears to be a difference in the number of days saved, the actual days saved per orthopedic patient needs to be weighted : total hip replacement versus total knee replacement. During this six month period, there were 12 total hip replacements and 16 total knee replacements, plus 25 other hip diagnoses for a total of 53 patients. Multiply the six month total of fifty-three patients by 2 to equal 106 total hip and total knee replacements per year.

Weighing the days saved results can be explained at this time by a 4:3 ratio, (total knee replacement : total hip replacement) [4(2.5)+3(1.6)]/2 and equal 2.11 days saved per total hip/ total knee replacement patient. Dollars billed per day on the skilled nursing/ rehabilitation unit is "approximately one thousand dollars, based on a limited sample" (per patient abstract report 5 July 1994).

Combining all these numbers, one can see how much in billing charges could be saved by the site hospital. 2.11 days saved x 106 patients per year x $1000 per day equals $223,600 per year in billing charges although not actual hospital savings. At this time actual dollars saved by this hospital cannot be

determined, but statistical data would suggest that the amount would be significant.

TABLE 1a
TOTAL KNEE REPLACEMENT

#	M/F	age (years)	SNF/CMR # of days	P.T. sessions attended	weekend sessions missed	weekday sessions not attended
1	F	89	11	14	6	0
2	F	85	31	34	15	6
3	F	65	1	1	0	0
4	F	82	27	32	9	7
5	F	86	9	11	3	2
6	F	87	12	13	7	4
7	M	80	15	23	6	0
8	F	92	18	24	11	0
9	F	96	25	31	14	3
10	M	88	22	30	10	3
11	F	81	10	9	7	2
12	M	79	11	16	6	0
13	F	77	22	28	9	3
14	M	71	16	19	6	4
15	F	74	11	17	3	2
16	F	86	15	20	6	2
TOTALS n= 16 F=12 M=4 F:M=3		x= 82.4 s= 7.99 r= 65--96	x= 16.0 s= 7.77 s = 60.4	x= 20.1 s= 322	s= 118	s= 38

Table 2a
TOTAL HIP REPLACEMENT

#	M/F	age (years)	SNF/CMR days	P.T. sessions attended	weekend sessions missed	weekday sessions not attended
1	F	92	19	26	10	1
2	F	84	12	17	3	3
3	M	79	3	5	0	0
4	F	69	8	13	3	0
5	F	73	7	9	3	1
6	F	72	9	13	4	0
7	F	88	21	31	6	1
8	F	103	20	31	9	1
9	F	80	6	8	3	0
10	M	66	9	14	3	1
11	F	77	22	27	9	6
12	M	84	2	3	0	0
TOTALS n= 12 F= 9 M= 3 F:M= 3		x= 80.6 s= 10.5 r= 66--103	x= 11.5 s= 7.18 s = 51.5	x= 16.4 s= 197	s= 53	s= 14

Table 1b
DAYS SAVED/PATIENT (TKR)

Weekend efficiency	Actual Weekend P.T. missed	Total Days Saved	Days Saved/ Patient
(118-38)/118=.68	.68(118)= 80.2	40.1	40.1/16.0= 2.5

Table 2b
DAYS SAVED/PATIENT (THR)

Weekend efficiency	Actual Weekend P.T. missed	Total Days Saved	Days Saved/ Patient
(53-14)/53= .74	.74(53)= 39.2	19.6	19.6/12= 1.6

Two professionals in geriatric physical therapy reviewed this program/ culminating project. The first reader has a Master of Science degree in Physical Therapy. She graduated ten years ago and has practiced in geriatrics since that time. The second reader has a Master of Science degree in Health Science Management as well as an Associates degree to work as a Physical Therapist Assistant. She graduated eight years ago and has practiced her profession in geriatrics since then. Both readers agreed the program for pre-education for total joint replacement was necessary and beneficial. After reviewing the program both stated the original patient questionnaire in interview form could be confusing to the geriatric population. The second reader also suggested decreasing the number of questions on the questionnaire to assist the patients in staying focused on the task to finish the evaluation. All suggestions were taken into account and the evaluation of the program changed from interview format with eighteen questions to a more simplified thirteen question written format (See Appendices Q, R, and S).

CHAPTER V

Discussion

By reviewing the statistics gathered and compiled in Chapter Four, the reader can see that the average length of stay is 16.0 days for patients with the diagnosis of total knee replacement. In addition, the average length of stay for patients with total hip replacement is 11.5 days. These numbers are significant when placed against national averages for goal length of stays for each diagnosis. From an interview with Nancy Doerr, Director of Social Services, managed care companies desire clinical pathways to guide nursing, doctors, therapies and other hospital departments day to day throughout the patients stay, on exactly what to do on each day. At this time these companies allow up to five days, with a preferred goal of four days for patient length of stay for total hip replacement. Total knee replacement has a relatively quick turnover time as well, getting six days with a goal for five days before discharge from the hospital.

A typical physical therapy clinical pathway would list certain activities to be accomplished from day one through discharge. For example on the first day, the total hip replacement patient would be instructed in breathing, total hip replacement precautions, basic lower extremity exercises and would be required to stand for a certain amount of minutes. Day two would involve progressive lower

extremity exercises, bed mobility, transfer training and ambulation training. On days three, four and five, the patient would become increasingly independent.

Comparing national goal average to the site hospital average length of stay for total hip replacement at 5 days to 11.5 days, and total knee replacement 6 days to 16.0 days, one can easily recognize the need for change in the "system" to keep up with the ever-progressive world of hospital medicine. With this in mind, the education program designed and developed by the author would be of great benefit for the institution. But, as is many times the case, hurdles and setbacks present themselves.

After all topics had been agreed upon by two orthopedic surgeons, the full program was developed into approximately a one hour course. Unfortunately, after further consideration, both doctors indicated that they did not want the physical therapy staff discussing joint replacements with their patients as well as demonstrating prosthetics with pictures or actual prosthetics, doctors protocol day one through discharge and topics of in house transfers from acute to skilled nursing facility versus rehabilitation unit (See Appendix T).

With this as the new understanding, a significant portion of the education process by the physical therapy staff no longer existed. The decision by the doctors decreased the length of the original program by approximately thirty

minutes leaving the final proposed seminar thirty minutes in length. With this in mind, cost of van transportation, therapist salary, and therapist time were carefully scrutinized by the author which led to the decision that the new program would not be cost effective to initiate at that time.

Suggestions for Future Research

In the future the author suggests contacting a larger number of orthopedic surgeons. In order to obtain a larger sample population. In return, with improved results of decreased length of stay, perhaps more orthopedic surgeons would better understand the reasoning and rationale behind the education and to improve utilization of the program.

The author feels strongly that as the pieces come together and such an education program is installed into the pre-surgical process, the doctor, rehab staff and hospital win. More importantly however, the patient truly comes out triumphant by exiting the hospital more expediently, thus decreasing the chance for nocosomial infection and quicker return to an independent level of functioning.

The importance and need for the education packet and a preoperative education seminar appears evident to the author. It would assist the patients both physically by increasing strength prior to surgery, and also aid the patients psychologically by decreasing anxiety level through education. The joint

replacement program outlined in this document could lay a solid foundation for future efforts in this direction - a foundation which could act as a catalyst for constructing new programs in the rehabilitation hospital's ongoing pursuit of profitability in conjunction with improved patient care.

For More Information or to Register for Getting Ready for Total Joint Replacement contact:
Jason R. Delaney, P.T.
Physical Therapy Department

Appendix A

We are committed to quality, personalized patient care...

Incarnate Word Hospital
(314)-865-6401

Incarnate Word Hospital

presents

Getting Ready for Total Joint Replacement

by

Jason R. Delaney, P.T.

Department of Physical Therapy

For Better Results and Faster Recovery

Total Replacement of major joints such as the shoulder, elbow, knee and hip have become more common and no longer viewed as complex as they once were. But as a candidate for total joint replacement, you may be approaching your operation with some fears, doubts, or anxiety.

There's no doubt that recovery from any surgery can be a challenge. Doctors overwhelmingly say that the best route to recovery is good knowledge and understanding of the proposed surgery.

Getting Ready for Total Joint Replacement Surgery, the forty-five minute class offered by Incarnate Word Hospital is designed to reduce your concerns and accelerate your recovery through a thorough understanding of:

- how to prepare physically and emotionally for surgery,
- what to expect during surgery,
- what to expect immediately after surgery,
- what you will need to do after surgery both while you are in the hospital and after you leave to regain optimal mobility and lead as full a life as possible.

Classes are based to your unique needs and concerns, so you get the personal attention you deserve. You are the only person in the class for a distinctively personal touch.

Classes are held in the Physical Therapy Department at Incarnate Word Hospital and are taught by Registered Physical Therapists and Certified Physical Therapist Assistants. A brief hospital tour of floors three, four, and five is given following the session for a better understanding of how each floor operates.

Your class can be arranged at a time that is convenient for you from 7:30 am to 4:00 pm Monday through Friday. Appointments may be made anytime from two days to two weeks before your scheduled surgery. However, reservations must be made in advance.

If transportation is a problem, Incarnate Word Van Transport will be happy to pick you up at your home and return you after your visit - free of charge. Reservations for van transport must be made one week in advance.

Research shows that patients experience more discomfort and benefit less from therapy when they don't receive pre-surgery education.

For Your Health

Appendix B

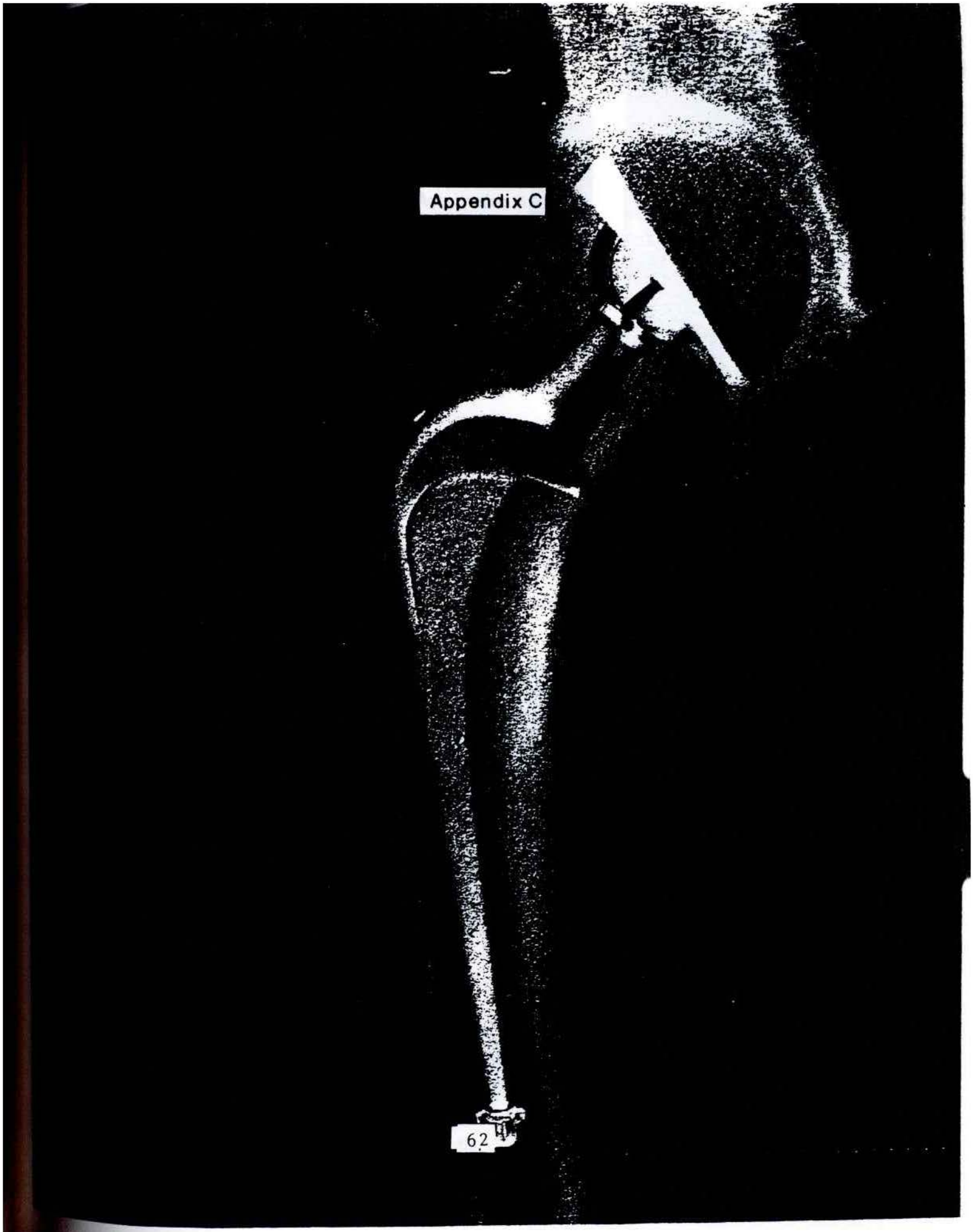
Welcome to the Total Joint Replacement Patient Education Program at Incarnate Word Hospital. This class and booklet is designed to help you and your family understand joint replacement surgery.

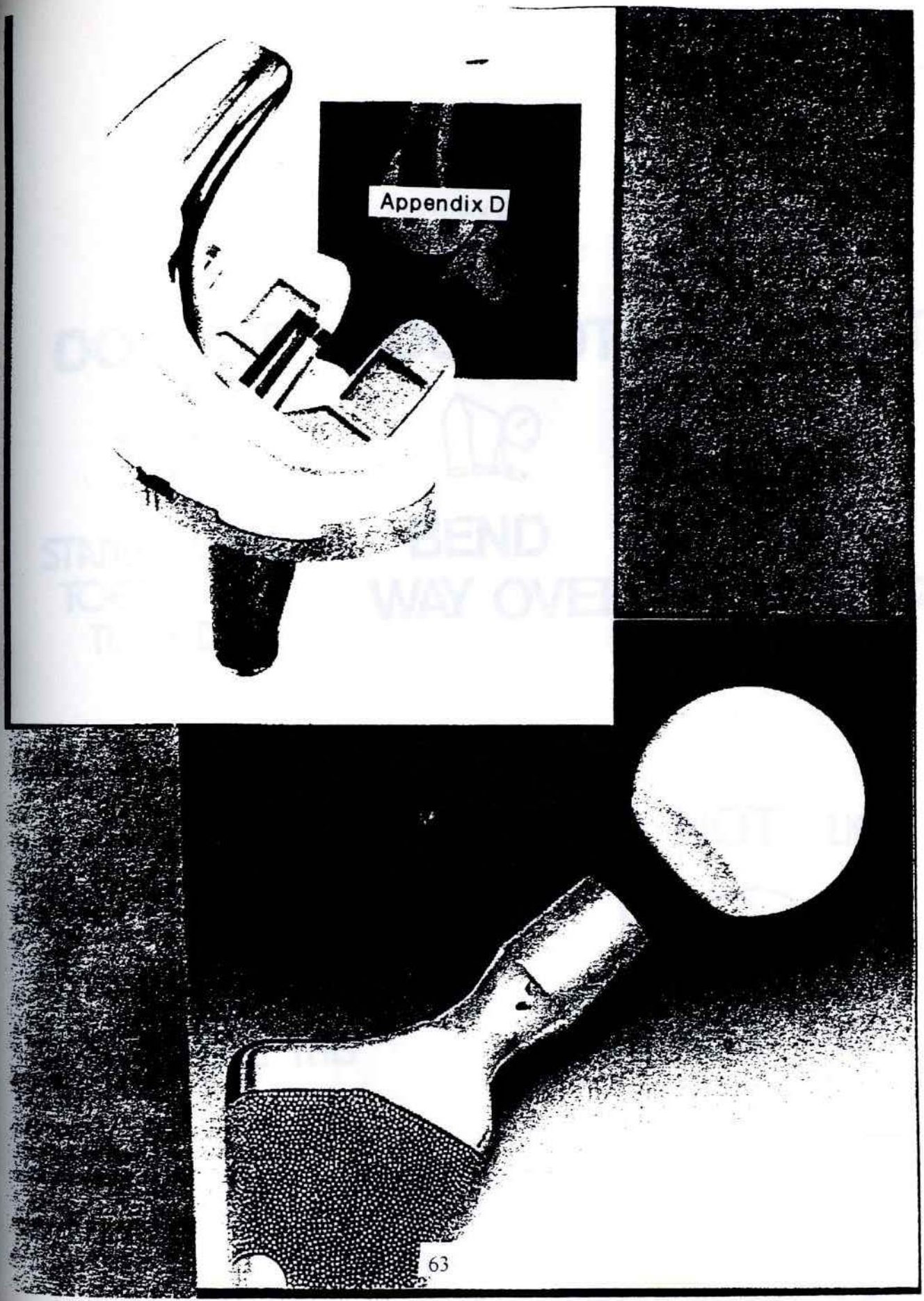
Please feel free to ask questions at anytime.

My name is Jason Delaney, the course instructor. I am also a Physical Therapist at the hospital. You can reach me for questions or concerns at (314) 865-6401 Monday through Friday 8:00 to 4:30.

Once again, welcome!

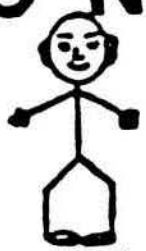
Jason R. Delaney, P.T.


Appendix C


Appendix D

Appendix E

DO NOT



STAND WITH TOES TURNED IN

DO NOT

BEND WAY OVER

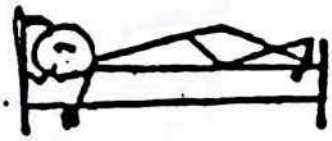
DO NOT

CROSS LEGS

DO NOT

PULL BLANKETS UP LIKE THIS

DO NOT LIE



WITHOUT PILLOW BETWEEN LEGS

and don't forget THIS!

SAFE

2

DO NOT INTERNALLY ROTATE YOUR HIPS! (NEVER turn Knees or Feet Inward toward Midline of your Body).

DANGER

3

DO NOT ADDUCT YOUR HIP! (NEVER Cross your Legs in front of your Body).

AS EXAMPLES:

KEEP LEGS SEPARATED

NEVER CROSS LEGS (Standing or Sitting)

DANCE A SLOW WALTZ

NEVER DANCE THE TWIST (or BELLY DANCE!)

Appendix F

HELPFUL HINTS

FOR AT LEAST 3 MONTHS...

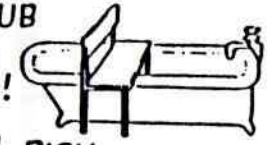
CONTINUE YOUR EXERCISE PROGRAM AT HOME.

When Lying Down, Keep a LARGE PILLOW Between your knees.

Use a RAISED Toilet Seat.

Sit in HIGH CHAIRS and use a Cushion. NEVER sit in Low, Soft Chairs, Couches or Rocking Chairs.

Use a BATH BENCH in TUB -or SHOWER. NEVER sit on BOTTOM of Tub!



Lift Objects from Floor with PICK-UP TONGS or "DRESSING STICK"

Wear Safe, Low Heel Shoes.

Avoid DRIVING a Car for 3 Months (Ask for Driving Evaluation - if available)

Sexual Activity may be resumed when you go home. DON'T FORGET to follow the HIP PRECAUTIONS you have learned. If you're not sure about Safe Hip Positions, ask your P.T.

KEEP Your WEIGHT within NORMAL LIMITS.

Visit Your Doctor or Clinic for FOLLOW-UP CARE - or if You have any Problems.

Take Medication ONLY as Prescribed by Your Doctor.

PHYSICAL THERAPY

The physical therapist is specially trained to improve movement and function, relieve pain, and expand a patient's movement potential. Through evaluation and individualized treatment programs, physical therapists treat existing problems and provide preventative health care for individuals with a variety of needs.

Personal goals for therapy are important. One patient's goals may be self-care and independence after a stroke. Other patients may seek to overcome back pain, learn to walk with an arthritic hip, or regain strength to accomplish basic living tasks.

Services Offered:

*** Therapeutic Exercise**
The purpose is to restore, improve, or maintain strength, elasticity, and coordination of muscle tissue.

*** Balance Transfer Skills**
Teaches the patient to move from one surface to another with increased safety and awareness of body positioning and body mechanics.

*** Gait Skills**
Teaches the Patient to correct gait (walking) deviations to allow for increased level of mobility and safety. Assess for need of assistive devices.

*** Pain Management**
Reduction and/or relief of pain through the use of heat, cold, TENS units. Also utilizes relaxation techniques, and positioning.

*** Prosthetic/Orthotic Devices**
Evaluation of need and training in the use of prosthetic/orthotic devices to increase functional mobility.

After approval by the referring physician and assessment of the patient, the therapist establishes a treatment program and identifies specific goals to produce the most cost-effective outcome.

OCCUPATIONAL THERAPY

The occupational therapist is specially trained to assess and individually design therapeutic activities to improve an individual's physical condition and level of independent function with Activities of Daily Living.

Services Offered:

* **Therapeutic Exercise**
  The occupational therapist selects activities that are designed to meet the physical needs of the patient and adapts them on an individual basis. An initial evaluation of the patient's upper extremity strength, sensation, and coordination provides a base from which appropriate activities can be selected.

* **Splint Construction**
  Occupational therapists use splinting techniques to prevent deformity, assist weak muscles, and to restore function.

* **Activities of Daily Living (ADLs)**
  ADLs are evaluated by the occupational therapist in the areas of bathing, dressing, personal hygiene, eating, and functional mobility skills. Various types of adaptive equipment and compensatory techniques are used to improve a patient's performance in these areas. Cognitive functions and perceptual skills will be a determining factor in the patient's overall success, as patients with impaired judgement and/or problem solving skills have more difficulty learning new techniques.

* **Work Simplification/Energy Conservation Techniques**
  Patients with severe arthritis, cardiac and/or pulmonary problems may benefit from training in proper breathing techniques, energy conservation ideas when performing daily activities, and improve organization of daily activities to limit unnecessary steps.

* **Positioning**
  Posture is assessed to provide optimum positioning in bed or chair to facilitate ADLs, hygiene, and comfort of the patient.

After a physician's order, the occupational therapist evaluates the patient's functional strengths and deficits, develops a plan of care, provides specific treatment and involves caretakers in instruction of carry-over and follow-through of newly acquired skills.

WHAT TO BRING TO THE HOSPITAL

1. **Personal hygiene items:**
   Toothbrush, toothpaste, comb, deodorant, mouthwash

2. **Short robe**
   One that does not touch the floor

3. **Non-skid flat slippers**

4. **Non-skid walking shoes**

5. **List of medications you take at home**

6. **Copy of living will/ advanced directives**

7. **Books, magazines or other reading materials**

Appendix J

GENERAL DISCHARGE INSTRUCTIONS FOR TOTAL JOINT PATIENTS

1. **CONTINUE TO USE A WALKER OR CANE WHEN YOU WALK.**

2. **CONTINUE TO WEAR ELASTIC STOCKINGS AT HOME UNTIL YOUR FOLLOW-UP VISIT WITH YOUR SURGEON. IF YOU WERE NOT WEARING STOCKINGS IN THE HOSPITAL, DISREGARD THIS INSTRUCTION.**

3. **BE SURE TO REST IN BETWEEN PERIODS OF ACTIVITY. DO NOT BECOME OVERTIRED. GRADUALLY INCREASES YOUR ACTIVITY AT HOME. DO NOT LIFT, STRAIN, OR OVERDO.**

4. **NOTIFY YOUR SURGEON IF THE FOLLOWING OCCURS:**
   - **A. YOU RUN A FEVER OF OVER 101**
   - **B. YOU EXPERIENCE UNUSUAL PAIN IN THE CALF**
   - **C. YOU NOTICE SUDDEN PAIN OR SWELLING AT THE INCISION**
   - **D. YOU OBSERVE A CHANGE IN THE COLOR OR ODOR OF DRAINAGE FROM YOUR INCISION**

5. **TAKE THE PRESCRIBED PAIN MEDICATION AS DIRECTED. AS THE DISCOMFORT LESSENS, YOU MAY NOT NEED PAIN MEDIATION AT ALL.**

6. **EAT A WELL BALANCED DIET. PROTEIN AND VITAMIN C ARE ESSENTIAL IN PROMOTING HEALING.**

7. **AVOID CONSTIPATION. EAT FOODS HIGH IN FIBER AND DRINK PLENTY OF FLUIDS. YOU MAY NEED A MILD LAXATIVE WHILE TAKING PAIN MEDICATION.**

Appendix K

HOME EVALUATION Home Evaluation ~ Home Visit ::
Date:

Reviewed with:

THE CHECKED ITEMS ARE RECOMMENDED CHANGES FOR YOUR HOME

PROBLEM	RECOMMENDATION
1. Throw rugs and extension cords are easy to trip over.	Remove all throw rugs and tape down extension cords.
2. Difficulty reaching and bending.	Place commonly used items within your reach.
3. Slippery bathtub/shower surface.	Place non-skid strips or mat in surface to prevent slipping, use soap-on-a-rope or liquid soap.
4. Furniture that is low, soft or has wheels is difficult to get in and out of.	Avoid these types of chairs. Utilize chairs with armrests to aid leverage. For low chairs add a cushion or pillow.
5. Low commode difficult to get off.	Recommend raised toilet seat or grab bar.
6. Standing to shower requires a lot of balance and energy.	Sit on tub seat to shower, use hand held shower.
7. Difficulty transferring in and out of bathtub.	Use shower chair to sit down and swing legs into tub. Refer to Discharge Instructions for specifics if needed.
8. No smoke alarm.	Recommend installing smoke alarm.
9. Phones are high on wall or out of reach.	Be sure that at least one phone is accessible on a table top.
10. Steps without rails that can be difficult to ascend/ descend.	If possible, add railing along at least one side.
11. Other:	

Appendix L

DO THE FOLLOWING EXERCISES 2 TIMES A DAY
DO EXERCISES SLOWLY, DON'T HOLD YOUR BREATH

1. **ANKLE PUMPS:**
   MOVE FOOT UP AND DOWN KEEP TOES POINTED.
   DO 20 TIMES.

2. **QUAD SETS:**
   LIE ON YOUR BACK WITH KNEES STRAIGHT. PUSH THE KNEE DOWNWARD INTO THE BED, TIGHTENING THE MUSCLES ON TOP OF YOUR THIGH. RELAX.
   DO 20 TIMES.

3. **GLUT SETS:**
   LIE ON YOUR BACK. SQUEEZE YOUR BUTTOCK MUSCLES TOGETHER.
   REPEAT 20 TIMES.

4. **WINDSHIELD WIPERS:**
   LIE ON YOUR BACK WITH KNEES STRAIGHT. MOVE ONE LEG OUT TO THE SIDE THEN BACK TO THE MIDDLE. DO NOT CROSS LEG PAST THE MIDDLE.
   REPEAT 20 TIMES.

5. **STRAIGHT LEG RAISE:**
   LIE ON YOUR BACK, BEND YOUR UNOPERATED LEG UP AND PLACE FOOT ON THE BED. KEEPING YOUR OPERATED KNEE STRAIGHT, SLOWLY LIFT YOUR LEG UP MAKING SURE TO LIFT THE HEEL FIRST. NOW SLOWLY LOWER LEG BACK DOWN.
   DO 20 TIMES.

6. **TERMINAL KNEE EXTENSION:**
   LIE ON YOUR BACK AND PLACE A SMALL TOWEL OR BLANKET ROLL UNDER YOUR KNEES. STRAIGHTEN YOUR KNEES AS YOU LIFT HEEL FROM BED. HOLD 5 COUNTS.
   DO 20 TIMES.

7. **HEEL SLIDES:**
   LIE ON YOUR BACK, BEND YOUR KNEE AND SLIDE YOUR HEEL UP THE BED. DO NOT BEND YOUR HIP PAST 90 DEGREES.
   REPEAT 20 TIMES.

8. **BRIDGING:**
   WITH ROLL UNDER KNEES. PICK FANNY UP OFF BED.
   REPEAT 20 TIMES.

Bend ankles up and down,
alternating feet.

Appendix M

2.

Slowly tighten muscles on thigh of straight leg
while counting to 10 out loud.

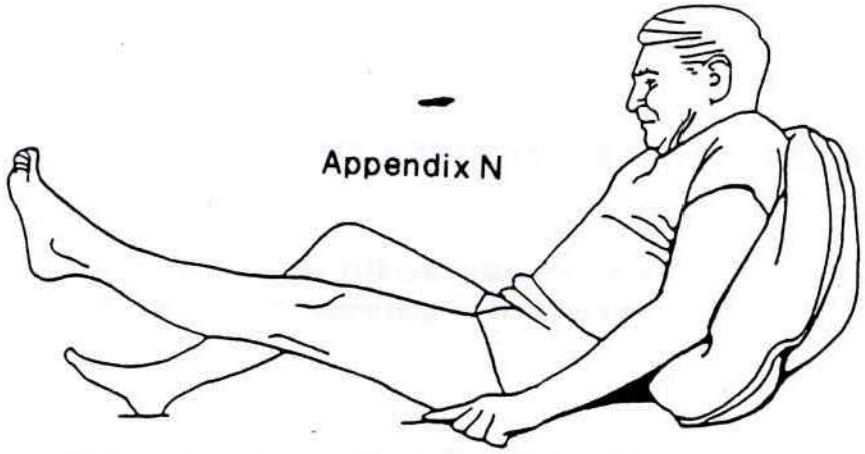
3.

Squeeze buttocks muscles
as tightly as possible
while counting out loud
for 10 seconds.

4.

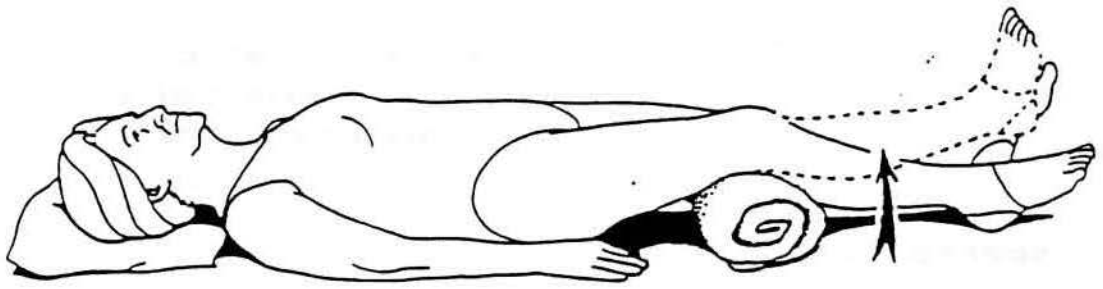
Slide one leg out to the side.
Keep kneecap pointing toward ceiling.
Gently bring leg back to pillow. Repeat with other leg

5.



Bend one leg. Keep other leg as straight as possible and tighten muscles on top of thigh. Slowly lift straight leg 10 inches from bed and hold 2 seconds. Lower it, keep tight

6.



Place a large can or rolled towel under leg. Straighten knee and leg.

7.

Bend knee and pull heel toward buttocks.

Appendix O

TOTAL JOINT REPLACEMENT PATIENT EDUCATION EVALUATION

Please take a few moments to fill out the evaluation form. Feel free to add any comments before returning it in the enclosed, self-addressed envelope.

1. I was referred to the Education Program by:

- **a. Orthopedic Surgeon's office**
- **b. Incarnate Word's Community Program Department**
- **c. Contacted by class instructor**
- **d. Other_____**

2. My pre-surgical instruction was done by:

- **a. Group class at Incarnate Word**
- **b. Individual instruction**
- **c. Home visit from instructor**
- **d. Other_____**

Please rate the following questions from 1 through 5 by circling your answer; 5 is the highest rating.

3. The instructor was knowledgeable of the subject. 5 4 3 2 1

4. The instructor was prompt and courteous. 5 4 3 2 1

5. The instructor made me feel comfortable in asking questions. 5 4 3 2 1

6. The class helped to alleviate my fears before surgery. 5 4 3 2 1

7. The material presented was concise and clear. 5 4 3 2 1

8. The class helped me with discharge planning and home needs. 5 4 3 2 1

9. The class prepared me for what to expect during hospitalization. 5 4 3 2 1

10. The brochure was informative and understandable. 5 4 3 2 1

11. Please rate your overall satisfaction with your experience at Incarnate Word. **5 4 3 2 1**

Please circle "Yes" or "No" to the following questions.

12. Would you recommend the class to a friend or family member? **Yes No**

13. Would you recommend Incarnate Word to a friend or family member? **Yes No**

13a. If no, why not?

_____

_____

_____

_____

_____

_____

Comments:

_____

_____

_____

_____

_____

_____

Name (optional)

_____

Thank you for your time.

Appendix Q

The interview session that you are about to complete is part of a continuous study to assist in improving the education session you attended before surgery. The information gathered from the question-answer session will help the department of physical therapy to change or modify any subjects covered in the education program that remain unclear to patients with hip replacements.

All of your responses are completely confidential and you will remain anonymous. To answer all eighteen questions will take between five and ten minutes and deal with the education you received prior to your surgery.

If at any time you wish to stop the interview session please inform me of this, and the session will end.

Thank you in advance for your cooperation.

Questions 1,2 and 3 should be answered with a number between 0 and 10, 0 being the very least and 10 being the most. Questions 4 through 18 should be answered with a number between 1 and 5. The scale looks like this:

1 Very unhelpful
2 Somewhat unhelpful
3 Neither helpful nor unhelpful
4 Somewhat helpful
5 Very helpful

1. What was your anxiety level on the first day of therapy following surgery?
2. What is your anxiety level at this time?

3. What is your pain level at this time?
4. How helpful was the information received on the actual procedure of total hip replacement surgery?
5. How helpful was the information received on your doctor's protocol for using the tilt table? (A tilt table is a table that tilts the patients in space from a horizontal position to a vertical position so as not to cause the patient's blood pressure to drop suddenly leading to him fainting.)
6. How helpful was the information received on the use of your abduction pillow? (An abduction pillow is a pillow placed between the patient's legs to keep them form crossing and allowing the new hip to pop out of joint.)
7. How helpful was the information received on the use of your abduction brace? (The brace is used for the same reasons the pillow is used.)
8. How helpful was the information received on the precautions you must follow to keep your new hip safe and working properly?
9. How helpful was the information received on weight bearing precautions on your new hip?
10. How helpful was the information received on the necessity of attending all therapy sessions?
11. How helpful was the information received on in-hospital transfers from floor to floor?

Appendix S

12. How helpful was the information received on physical therapy's role in helping you return to independence?
13. How helpful was the information received on occupational therapy's role in helping you return to independence?
14. How helpful was the information received on exercises you would be required to complete in physical therapy on a daily basis?
15. How helpful was the information received on the use of adaptive equipment such as the long-handled reacher, raised toilet seat and transfer-tub bench?
16. How helpful was the information received on the use of a walker to help you walk?
17. How helpful was the information received on modifications that may be needed where you live?
18. How helpful was the information received on the possible need for home health care physical therapy to continue working with you after your return to home?

Appendix T

January 23, 1995

Jason Delaney
Department of Physical Therapy
Incarnate Word Hospital
3545 Lafayette
St. Louis, Missouri 63104

Dear Mr. Delaney:

I was happy to discuss your recommendations for pre-total joint replacement class topics in my office. I have had an opportunity to look over the document that you gave me regarding the pre-total joint replacement class topics and I have discussed this document with Dr. Evans. Both of us believe that the first three items on the proposed class topic document are items that are the physician's responsibility as opposed to that of the physical therapist. Dr. Evans and I both discuss in detail our joint replacements with our patients and we do cover the demonstration of the prosthesis with pictures and actual prosthetics, as well as, our doctors protocol day one through discharge and the topics of in house transfers from acute to skilled nursing facility versus rehabilitation unit. We do not want the physical therapist discussing these topics with our patients. We see no problem with the discussion of the other topics such as anticipated pain level after surgery, limitation and precautions, adaptive equipment, exercises, expectations, discussion of therapy after discharge and question and answer sessions. I want to emphasize that we do not, however, want any discussion regarding the first three topics, ie demonstration of prosthesis with pictures and actual prosthesis, doctors protocol day one through discharge, and in house transfers from acute to skilled nursing facility versus rehabilitation unit. Dr. Evans and I will cover those topics and have covered those topics ourselves with our patients.

Given the above understanding we will be happy to have you initiate program such as this with our total joint replacements pre-operatively.

Sincerely yours,

Thomas M. Hawk, M.D.

TMH/lid

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