

EFFECTS OF INSERVICE EDUCATION REGARDING WHEELCHAIRS AND
WHEELCHAIR PATIENT MANAGEMENT ON PATIENTS AND
NURSING STAFF OF SELECTED EXTENDED
CARE FACILITIES

A THESIS

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CHAPTER I

INTRODUCTION

In the course of the author's experience in the field of geriatric rehabilitation, inservice education has been a valuable tool. The effects of inservice education have served not only the primary caregiver of the extended care facility, but have also been useful in the rehabilitation efforts of the patient and the patient's family.

A study involving approximately 80 nursing homes and extended care facilities was undertaken by the combined staffs of the Office of Vocational Rehabilitation through the Peoria Institute of Physical Medicine and Rehabilitation and the Illinois Public Aid Commission in 1957. This three year study was the first of its kind in the United States. Its purpose was to establish inservice education programs in extended care facilities using consultants from all relevant health and rehabilitation related professions. These consultants formed teams, providing inservice programs within the extended care facilities involved in the study. Among the questions asked in the 1959 study, the following one appears as relevant to this study. "Can the existing staffs of the nursing homes under study meet the

rehabilitation needs of their patients if they receive adequate training in the philosophy and techniques of rehabilitation" (Hackley, 1959, pp. 989-990)? They found that:

1. Providing inservice education programming within the participating facility is both most practical and most effective.

2. Indirectly there is an improvement in the attitudes of the staff receiving inservice education due to the improved morale and health of the patients. There was also an improved attitude among nursing personnel due to the increased technical knowledge gained through inservice programs.

Generalizations regarding training programs have been drawn from the Illinois study and may be considered when developing any inservice program of this nature.

1. It is essential that the training program be requested voluntarily and desired by the facilities' staff and administration if the training is to be effective and the program continued.

2. The staff must have stable employment, be highly motivated, and be experienced in nursing service if maximum benefit is to be derived.

3. A training program can provide the staff with no more than specific tools and techniques to be used in medically prescribed rehabilitative care of patients.

4. Rehabilitation services can be developed best only on sound basic nursing techniques. Institutions with good administrative policies, procedures, and acceptable intake policies and procedures are the most promising settings for inservice education programs.

5. Homes involved in the study found that their greatest expense was the staff time devoted to training.

6. Although stability of staff in the cooperating nursing homes was extremely difficult to measure adequately, observations indicated a trend toward reduced turnover in some facilities after such a training program had started. In others, continued turnover tangibly affected the efficiency of the rehabilitation services that had been started (Hackley, 1959).

Statement of the Problem

The purpose of the study was to determine whether improvements in self-care function and reduction in accidents might be seen in wheelchair dependent patients of extended care facilities as a result of inservice education

given to nursing personnel. The topic of the inservice presentation was wheelchairs and wheelchair patient management.

Statement of the Subproblems

The first subproblem:

Has inservice education produced any measurable differences in the level of general awareness and practical knowledge of the nursing staff as regards both wheelchairs and wheelchair patient management?

The second subproblem:

Has the patient's level of function, measured in terms of self-care skills and wheelchair mobility changed as a result of inservice given to nursing personnel?

The third subproblem:

Has inservice education given to nursing personnel had a measurable effect on the frequency and/or intensity of wheelchair related incidents in the facilities studied?

Importance of the Study

In many of the extended care facilities in the United States there are no staff occupational or physical therapists available to provide patients with necessary orientation, safety and mobility training in the use of their

wheelchairs. Responsibilities of patient care and rehabilitative efforts fall upon nursing staff. It is the author's belief that nursing personnel can have a more effective influence in the rehabilitative efforts of their patients if they have better information with which to work.

Hypotheses

The null hypotheses tested in the study were:

1. There are no significant changes in the levels of knowledge of nursing personnel regarding wheelchairs and wheelchair patient management given the inservice education.
2. There are no significant changes in the levels of self-care skills of the patients as a result of inservice given to nursing personnel.
3. There are no significant changes seen in the frequency and/or intensity of wheelchair related incidents in the facilities where inservice education was given to nursing personnel.

Limitations of the Study

The study is based on the following limitations:

1. Patients with a length of stay greater than three months were included.

2. Patients whose initial evaluation score placed them in either Group II or III of the Parachek Geriatric Rating Scale were included.

3. Nursing personnel working during the second shift only (3:00-11:00 p.m.) were included.

Definition of Terms

For purposes of this study, the following definitions applied:

Wheelchair dependent patient: Patients who rely on either a wheelchair or a Geri-chair for all transportation and mobility within the facilities under study (Kamenetz, 1969).

Geri-chair: A chair designed to give more support to the frail elderly. This chair has small wheels preventing the patient from maneuvering the chair under his or her own power (Snyder, 1972).

Extended care facility: A facility where the predominant level of care is "intermediate" as defined by Medicare and Medicaid guidelines. A number of names are given to extended care facilities. The text of this thesis will refer to nursing homes and long-term care facilities inclusively as extended care (Falk, 1976).

Inservice Education: A single presentation of principles and practical applications of wheelchair patient management, offered to the nursing staff of the extended care facilities included in this study.

Level of function: Self-care skills: A numerical value derived from evaluation using the Parachek Geriatric Rating Scale.

Parachek Geriatric Rating Scale: "A simple and efficient way of determining the capabilities of an individual patient" considering physical condition, self-care, and social behaviors. Although it has been standardized on male adult psychiatric veterans, it was chosen for its ease of administering. It requires little direct patient interaction and can be accomplished by taking information from the flow sheets of nursing service. It was also chosen due to its shortness. Longer evaluations were available but no other evaluation items were more appropriate (Parachek, 1974).

Abbreviations

PGRS: Parachek Geriatric Rating Scale

ECF: Extended care facility

W/C: Wheelchair.

Assumptions

The following assumptions are made throughout this study:

1. Patients and staff of the facilities under study are representative of ECF's in general.
2. The administrators of the facilities have a desire to cooperate for the well-being of patients and the upgrading of staff.
3. Staff receiving inservice can understand material presented.
4. Staff receiving inservice want to help in the rehabilitative effort of the facility.
5. The staff of the facilities under study will not know what effects are under study.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Problems of Extended Care Facilities

Today the extended care facility faces many problems. When speaking to administrators concerning their primary problems, it is evident that there are critical factors which influence their thinking. In the past three years the federal government has made the guidelines for extended care facilities more stringent in an effort to protect the consumer. The results are stiffer laws and demands from federal and state agencies in the administration of these facilities (See Appendix G, Regulations).

Sharing first place in the list of priorities are good patient care and finances. The nursing home and extended care facility wage an unending battle to keep trained, skilled and caring personnel to care for their patients and clients. The problem of employee turnover often is the most crippling factor to attempts at inservice education programs and upgrading programs for patients as well as staff (Hackley, 1959). Licensing authorities help to protect the rights of patients by assuring that nursing personnel are

adequately trained, and that standards of care are met on a regular inspection basis. (See Guidelines for Inservice Education, Appendix G). But staff education cannot be expected to meet such problems as placement of patients in facilities inappropriate to their needs. Neither can it resolve the conflict between high standards of service and low rates of payment, lack of council and casework services for patients and their families, and a general lack of appropriate facilities for discharged patients (Falk, 1976).

Patient Accidents in Extended Care Facilities

Research reveals that falls are the most common accident among the elderly. Peak frequencies for both major and minor falls are between 4:00-5:00 p.m. (the time of preparing for and/or going to dinner), 7:00-8:00 p.m. (the time of preparation for bed), 2:00-3:00 a.m. and 6:00-7:00 a.m. (when most patients get up in the morning). The area of least risk in these cases is the bathroom. The area of greatest risk is the bedside. Patients having three to six chronic problems have more major and minor falls as do patients being treated with more than three drugs simultaneously (Cogliano, 1975).

From these studies it might be concluded that the greatest number of incidents occurred during nursing's

second shift (3:00-11:00 p.m.). It was for this reason that second shift employees were chosen as subjects for this study.

Among wheelchair dependent patients, more accidents occur during transfers than any other activity. The primary causes of these accidents are both a failure to lock the brakes of the wheelchair before attempting transfer, and failure to prepare for and execute the transfer properly. Other causes are improper helping techniques on the part of nursing personnel, obstacles in the transfer path, and failure of restraining devices (Cogliano, 1975).

Nursing Approaches to Rehabilitation

The problems of understaffed facilities and overworked personnel leave the rehabilitation of the patient far down the list of priorities of most ECF nursing staffs. When essential care has been given to all of the patients, there is little time left before nurses and aides must repeat rounds of essential care once more. This leaves little, if any, time to spend working individually with patients on their rehabilitation programs.

For this reason it is essential that nursing personnel learn basic rehabilitative techniques as part of their primary training. "Commonly, nursing staff convey an

anticipation and acceptance of passivity and helplessness among their patients" (MacDonald, 1974, p. 97). Unfortunately, for the majority of institutionalized elderly in this country, there is a "tendency to treat old and/or ill people like infants. This attitude erodes the core of the concept of rehabilitation" (Hackler, 1976, p. 77). "Older people often do not abdicate their rights to think, plan, and care for themselves; however, we in the health care professions seize these powers in an attempt to perform our own jobs with ease" (Hackler, 1976, p. 77).

Inservice Education: Getting the Staff
to Teach the Patients

In the articles and books reviewed by this writer, one theme was repeated almost unanimously. It was a call for the development of inservice education in all aspects of geriatric and adult rehabilitation. These articles asked for the development of safety programs to teach personnel proper safety measures to use with and around patients. They asked that staff and administrators of long-term care facilities recognize and promote the concept of providing elderly patients with an environment and lifestyle which would help develop a sense of health and well-being (Cogliano, 1975).

If inservice education is to succeed in the extended care arena, we must understand how people learn and why. Hopefully, the ideas presented are applicable to nursing personnel and patients alike.

It has been shown that the learner learns best when learning is thought to be in the best interest of the health and well-being of the learner and when the educational objectives will serve to make the learner's job easier (Knowles, 1967).

Knowles (1975) outlined four main sets of assumptions on which adult learning is based. These concern self-concept, experience, readiness to learn, and orientation to learning. First, the adult's self-concept must change from that of a dependent person to one who is self-directed. This person learns best when the student and the teacher have mutual responsibility for identifying learning needs and objectives and both participate in planning, conducting, and evaluating the learner's experience. Secondly, the adult has accumulated a substantial reservoir of experience and has a broader foundation on which to build. He learns best through use of his own experiences. For the adult, doing is more effective than reading texts or listening to lectures. Thirdly, the adult works with a different point of reference than the younger person. The adult may learn

more readily because of this understanding. Lastly, the adult's time perspective is different. The adult approaches learning from a problem-solving frame of mind rather than the subject centered frame of reference of the young student in a classroom.

When working with elderly patients it must be kept in mind that they tend to be quite cautious, avoiding situations that present risk of embarrassment or failure. Opportunities for success must be maximized. New learning itself can inhibit the elderly patient. Since the elderly respond more slowly, the rate of speed at which new task materials are presented must be gauged accurately to allow for success. Understanding that safety is a need second only to the basic essentials for survival is critical for the nurse and nurse aide in the extended care facility; especially when working with the wheelchair dependent patient (Hackler, 1976). The patient's daily self-care activities present learning materials of the highest degree of meaning and relevance to the rehabilitative process. Avoid criticism and/or other negative reinforcement (Steiger, 1976).

Patient education in most health care settings can be improved. The education of patients involves a change process; modifying the habits of a lifetime. Adjustments

that affect the lifestyle of the individual are often complex and frightening to the patient or client. Problems of change may be compounded by patient values, cultural background, religion, education, lifestyle, the influences of family and friends, past experience, habit patterns, superstition, misinformation, fear and apathy (Ganong, 1976).

"People change themselves and their habits only when they want or need to. Change, like motivation, is a personal thing" (Ganong, 1976, p. 249).

The following guides may be helpful to the potential teacher in the position of teaching either nurse aides, patients, or family members (Kepner, 1979).

Prepare to instruct:

Have a timetable: How much skill or knowledge is the learner expected to have, by what date? Break down the task. List the important steps. Pick out the key points.

Have everything ready: The right equipment, materials, and supplies. Have the workplace properly arranged: Just as the learner will be expected to work within it and keep it.

How to instruct:

Step 1. Prepare the learner. Put him at ease. State the topic and find out what he already knows about it. Get

him interested in learning the procedure. Place in the correct position.

Step 2. Present the topic. Tell, show, illustrate one important step at a time. Stress each key point. Instruct clearly, completely and patiently but do not present more than he can master.

Step 3. Try-out performance. Have him do the procedure. Correct errors. Have him explain each key point to you as he does the procedure again. Continue until you are sure he knows how to perform the task correctly.

Step 4. Follow through. Put him on his own. Designate to whom he goes for help. Document progress. Check frequently. Encourage questions. Taper off extra coaching and follow-up.

While providing inservice education to the nurse aide/assistant, it may be helpful to keep four words in mind. They are guidelines for your presentation of learning materials. They are; clear, concise, complete, and concrete. Consider them in terms of how material is presented to the learner.

When the label of "patient" is replaced by one of "person", the value of patient education is evident. Changes in lifestyle which prevent or forestall further health problems indicate successful patient education and learning (Ganong, 1976).

CHAPTER III

THE POPULATIONS OF THE EXTENDED CARE FACILITY

The Patient Population

The average age of nursing home residents is 80 years: 70% are women and 90% are white. Some 85% to 90% of persons who enter nursing homes never leave. The average length of stay is 1.6 years, with one-third of the residents dying within the first year and another third between the first and third years. The final third live for more than three years. Breaking down these figures further, the average stay in a skilled nursing facility is 25 days and 2.5 years in an intermediate care facility (Falk, 1976).

Typically, the person has been taken from his or her home due to an acute trauma. After being in the acute care setting for some time, the patient is told by his physician and/or a concerned relative or friend that it would be in his best interests for him to enter a nursing facility for further rehabilitation and rest, after which he may return home (Falk, 1976).

The patient comes to the extended care facility with the hope of a foreseeable return to his former living

situation. Unfortunately, few will return to their homes for more than a visit. More often the patient's family help the patient to decide that it is better to stay in the protected, helpful environment of the nursing home rather than face the possibility of repeated or intensified trauma in the home (Falk, 1976).

The Nursing Staff of Second Shift

The nurse aide is often the most necessary, useful and in some cases the hardest working of all nursing home staff. She has the opportunity to develop close relationships with her patients and often has the closest relationship of anyone having patient contact. She feeds, bathes and cares for their most personal needs. A good aide cheers her patients (Falk, 1976).

The nurse aide is underpaid for the size of her responsibilities. She must clean up urine and feces and is in constant contact with helpless, depressed people. If she were conscientious she would need 22 hours in every eight-hour shift to accomplish all of the desirable as well as the necessary tasks she is assigned. She is the recipient of the unhappiness of the patient, the nurse and all other persons who feel upset about something in their environment (Falk, 1976).

CHAPTER IV

METHODOLOGY

Two facilities took part in this experimental study. Patients and staff in one facility acted as a control group while those in the other facility formed the experimental group. Attempts were made to insure that the size of the two groups were large enough to afford distinct reliability of data while small enough to be handled by one person with limited time and energy for investigation.

The study began with 25 patients from each facility and as many staff as were available for inclusion at the time of initial testing. In both the experimental and control facilities the number of staff involved was severely affected by staff turnover.

Inservice education on wheelchairs and wheelchair patient management was given in the experimental facility at a time determined by the coordinator of inservice education of the facility. The experimental facility had not received inservice on this specific subject for at least one year prior to this study. Both facilities included in this study were classified "intermediate" care level III by the licensing agency of the state of Texas.

The Subjects

Each of the facilities taking part in this study provided two groups of subjects; a patient group and a staff group. Because of the nature of the geriatric population today, the majority (almost 80%) of the patients involved in this study were female. All patient subjects had a length of stay longer than three months. The staff members were nursing aides and orderlies of the second shift (3:00-11:00 p.m.). This shift was chosen for its higher incidence of wheelchair related accidents and ease of observation of patients as they prepared for bed. There was no limit placed on the length of time staff had worked at the facility.

Instruments

Four instruments were used throughout this study. They were the Parachek Geriatric Rating Scale, the Patient Evaluation form, the Inservice Questionnaire and the Incident Key.

The Parachek Geriatric Rating Scale was chosen as the most appropriate evaluative tool available. Other rating scales and evaluations were considered.

The PAMIE scale (Gurel, 1972) was standardized on institutionalized, chronically ill, male veterans. It was rejected because its main thrust was behavioral, and its

self-care inventory included many more items than could be effectively handled within the scope of this research. Also considered was the Stockton Geriatric Rating Scale (Beer, 1966). This tool was standardized on psychiatric geriatric patients and also dealt primarily with behaviors.

The Parachek scale groups patient level of function from least to most able. Group I, with scores of ten to 25, were not considered in this study. Their level of function precluded their using a wheelchair. Groups II and III, with scores of 26 to 39 and 40 to 50 respectively were studied. Emphasis was placed on mobility skills and self-care skills of the Parachek evaluation (Appendix C).

The patient evaluation was formulated to give basic information on each patient involved in the study. It helped in defining the study group and its particular characteristics (See Patient Evaluation, Appendix B).

The inservice questionnaire was developed as an instrument to measure the nursing staff's knowledge of wheelchairs and wheelchair patient management. Its 25 questions, written by this researcher, served as a guide establishing a general level of knowledge from which to present the inservice material (See Appendix D).

The accident key was developed to give basic information about type, intensity, time, and location of incidents within the facilities studied (See Accident Key, Appendix E).

Procedure for Collecting Data

The study began by obtaining permission from the facility administrators to (1) observe and evaluate patients, (2) to be given access to the patients' medical charts and nursing flow sheets, and (3) to be given access to the incident records of the facilities. Permission was not secured from individual patients as data being gathered came from already existing sources and patients were not identified other than for purposes of observation. (See Appendix A). An initial evaluation was given to patients to gain a data base (See Patient Evaluation, Appendix B). The last part of the evaluation, the P.G.R.S., was completed by an observation of the patient and information gained from the flow sheet at the nurses' station. Once the initial evaluations were completed on the patient groups of both facilities, the staff nurses aides of second shift were given a questionnaire to complete as a data base for their group (See Inservice Questionnaire, Appendix D). The questions asked pertained to wheelchairs and/or wheelchair

patient management. When these questionnaires were complete, the last part of the initial data collection began. For the months of April, May, and June 1981, recorded incidents of both staff and patients were tallied and given values (See Accident Key, Appendix E).

The second phase of the study was the presentation of an inservice education program to the second shift staff nurse aides at the experimental facility (See Inservice Syllabus, Appendix F). Eight aides were present for the 50-minute presentation. All but one had completed the inservice questionnaire. The class was given at 9:00 p.m. (a time assigned for regular inservice for the 3:00 to 11:00 shift personnel).

After the inservice program was given at the experimental facility a waiting period ensued. During this time it was expected that personnel given the inservice would apply their new knowledge to themselves and their patients.

After approximately ten weeks, follow-up evaluations began at both facilities. Patients were given a second P.G.R.S., nurse aides were given a duplicate questionnaire, and incidents recorded for the months of July, August and September were tallied and given values.

When all data collection was completed, all shifts of both facilities were given the inservice program.

Criterion Governing Admissability of Data

The P.G.R.S. conveniently groups patients according to level of function. Considering that those patients who scored lower than 25 would be bed or chairfast, only those patients with scores of 25 and above were included in the study. If either the pre or post score were below the 25 sum, they were excluded from the study. This resulted in groups of unequal size. Both control and experimental groups began the study with 25 patients each. At the conclusion the experimental group had lost one subject due to acute hospitalization and the control group lost four: three because of inadmissible secondary P.G.R.S. scores, one due to acute hospitalization.

In order for the nurse aides' inservice questionnaires to be accepted, there had to be both a pre and post score available. As was the case in previous studies, the instability of this population greatly affected the outcome of all other statistics (Hackley, 1959). Of seven aides in the experimental facility who began the study, one was present in the facility for secondary testing. Of six aides in the control facility, two were present for secondary testing. This writer made three visits to each facility during the period of secondary testing in an effort to give secondary inservice questionnaires to remaining staff. Of

the seven aides in the experimental facility who began the study in June, 1981, two left the facility in July, two left the facility in August, and one transferred to the 7:00 a.m. to 3:00 p.m. shift. In the control facility, three aides left the facility in August, and one left in September.

Treatment of the Data

Patient evaluation data, patient and employee incident data, and inservice questionnaire data were subjected to paired t statistical analysis using both the ISP series and SPSS series analyses available in the DEC 20 computer system of Texas Woman's University.

CHAPTER V

FINDINGS

This study was undertaken to determine whether inservice education given to nursing personnel in extended care facilities could effect levels of self-care in wheelchair dependent patients, the frequency and intensity of wheelchair related incidents among both patients and staff, and the level of knowledge of nursing personnel about wheelchairs and wheelchair patient management. In all cases the null hypotheses were posed.

Forty-five patients in two facilities presented the following overall statistical means: mean age= 80.5, mean length of stay= 17 months, mean number of medications = 3. Of forty-five patients evaluated, three reported that someone had shown them how to use their wheelchairs. Fifty-seven percent knew where the brakes were on the wheelchair and could demonstrate their use. The control group had a mean age of 77.5, a mean length of stay of 21.3 months, and mean number of medications equaling 3. The experimental group had a mean age of 83, a mean length of stay of 13.6 months and a mean number of medications of 3.7. Wide

variation exists between mean, median and modes within each group in terms of length of stay.

Staff Responses

This author reminds the reader at this point that reliability of statistics involving patients and accidents hinge upon the reliability of nurse aide inservice questionnaire data. Due to scant admissable data, the employee inservice questionnaire yielded no significant statistics. In all cases the high turnover of nurse aides was responsible for the lack of a follow-up evaluation.

Table 1 shows that although one subject's score changed substantially, there was insufficient completed data to produce statistical significance. In both facilities the mean score on the pretest questionnaire was 20 (See Appendix D, raw scores).

Table 1
Inservice Questionnaire Pre/Post Scores

Experimental		Control	
Pretest	Posttest	Pretest	Posttest
19	20	22	x
27	x	18	x
24	x	21	21
24	x	19	x
9	25	20	x
		20	x

Patient Responses

Table 2 shows the mean scores of patient control and experimental groups, pre and post inservice and the combined group means. The mean age was older in the experimental group. The length of stay was longer for the control group. Both patient groups had approximately three prescribed medications per individual care plan.

Table 2
Mean Scores for Age, Length of Stay, and Number
of Medications by Patient Group

	Experimental	Control	Combined
Age	83	77.5	80.5
Length of Stay	13.6 mos.	21.3 mo.	17.0 mos.
Medications	3.7	3.0	3.4

Table 3 shows a comparison of P.G.R.S. scores by patient group, pre-post inservice. The initial P.G.R.S. evaluation mean score in the control facility was 37. The initial mean in the experimental facility was 34.7. The patient control group follow-up mean score was 37.3 showing an increase of less than one point. The patient experimental group follow-up mean P.G.R.S. score was 36.1 showing an increase of one and one-half points ($p = .018$) Two raw

scores of control group members decreased by nine and ten points respectively. The severe drop of these two scores affected the overall mean follow-up score for that group (See Appendix C, Raw Scores).

Table 3
Pre-Post Comparison of PGRS Scores by Group

	N	Pre-test		Post-test		<u>t</u>	p
		\bar{x}	s	\bar{x}	s		
Exp.	24	34.7	4.93	36.1	6.08	2.54	.018
Cont.	21	37.0	6.00	37.3	7.66	.05	n.s.d.

For a three-month period preceding inservice education, frequency of recorded incidents occurring during the 3:00 to 11:00 p.m. shift are shown in Table 4. Both the control and experimental facilities contained similar numbers of patients and staff. Frequencies are derived from among each facilities' wheelchair dependent population.

Table 4
Pretest Incident Frequency by Group
for Patients and Employees

	Control	Experimental
Patient	17	19
Employee	3	3

Posttest incident frequency for patients and staff of both control and experimental groups are shown in Table 5. A decrease in frequency of incidents is apparent in the experimental group of both patients and staff. The control group shows an increase in incident frequency for both patients and staff. These frequencies are also based on the wheelchair dependent populations of the facilities respectively.

Table 5
Posttest Incident Frequency by Group
for Patients and Employees

	Control	Experimental
Patients	19	9
Employees	4	2

Table 6 shows the frequency of patient incidents (pre-test) by intensity. In the control group incidents required medication more frequently than in the experimental group. Incidents among the experimental group presented a greater frequency having lower overall intensity values. Appendix E (Accident Key) provides explanation of intensity values.

Table 6
Pretest Frequency of Incidents by
Intensity for Patient Groups

Rating	1	2	3	4	5	6	7	8	x^2	p
Control	2	1	9	4	0	1	0	0	17.057	<.02
Experi- mental	4	8	4	0	1	1	1	0		

Table 7 shows that the intensity of incidents in the patient control group (posttest) dropped while the frequency increased. In the experimental group both the intensity and frequency dropped for the period following inservice education. Chi square value of 19.92 (df=7) is significant at the .01 level.

Table 7
Posttest Frequency of Incidents by
Intensity for Patient Groups

Rating	1	2	3	4	5	6	7	8	x^2	p
Control	16	2	0	0	1	0	0	0	19.920	<.01
Experi- mental	1	4	4	0	0	0	0	0		

Table 8 shows that less than 25% of incidents reported during the six-month period of this study required either the presence of a physician or medications containing narcotic elements. This may suggest that the greater percentage of incidents were of a minor nature. Reports in the literature (Cogliano, 1975; Kalchtaler, 1978; & Rodstein, 1964) further suggest that even "small" accidents serve to reduce the patients' sense of well being, discouraging future efforts at independent function, and fostering the continued philosophy of the patient as a dependent, relying on staff for constant supervision of daily life functions.

Table 8
Percentage of Patient Incidents by Intensity
for Experimental and Control Groups
for Six Months

Intensity	1	2	3	4	5	6	7	8
Experi- mental	17.9	42.9	28.6		3.6	3.6	3.6	
Control	50.0	8.3	25.0	11.1	2.8	2.8		

In Table 9 frequencies of control group patient incidents are listed by intensity. A noticeable reduction of intensity during the period of study is coupled with a

noticeable increase in the frequency of less severe incidents for the same period. Chi square value of 26 (with $df=7$) was significant at .001.

Table 9
Frequency of Patient Incidents by Intensity
Pre and Post for the control Group

Rating	1	2	3	4	5	6	7	8	N	x^2	p
Pre	2	1	9	4	0	1	0	0	17	26	.001
Post	16	2	0	0	1	0	0	0	19		

Table 10 reveals both a reduction in the frequency of incidents and a reduction in intensity for the patient group. Chi square value of 2.93, $df=7$, indicates no apparent significance.

Table 10
Frequency of Patient Incidents by Intensity Pre and
Post for the Experimental Group

Rating	1	2	3	4	5	6	7	8	N	x^2	p
Pre	4	8	4	1	1	1			19	2.936	n.s.d.
Post	1	4	4	0	0	0			9		

In Table 11 incidents are shown by percentage according to type for the experimental patient group. The total figures reflect documentation of multiple type accidents such as the combination of a wheelchair rolling away during a transfer (Type 2) and a fall happening during the same transfer (Type 5). Increases are seen pre to post in Types 2, 5, and 9. Decreases are apparent in Types 1, 3, 4, and 7.

Table 11
Percentage of Patient Incidents by Type Pre and
Post for the Experimental Group

	Type 1	2	3	4	5	6	7	8	9	10
Pre	5.1	20.5	5.1	12.8	30.7	15.38	7.69	0	2.56	0
Post	0	22.2	0	5.55	50.0	16.6	0	0	5.55	0

Table 12 shows incidents of control group patients by percentage and type for the six-month period of study. As in Table 11, incidents carried a potential for multiple categorization. Increases are apparent in Type 2 and 5. Decreases are seen for Types 3, 4, 6, 7, and 8. As in the case of the experimental group, the greatest percentage of incidents occurred in Type 5, transfer falls.

Table 12
Percentage of Patient Incidents by Type Pre and Post
for the Control Group

Type	1	2	3	4	5	6	7	8	9	10
Pre	0	4.7	4.7	9.5	52.3	23.8	4.7	0	0	0
Post	0	24.1	0	0	65.5	10.3	0	0	0	0

In Table 13, incidents of the experimental group employees are shown by percentage and type for the period of study. The pretest group experienced 66% of incidents by muscle strain during lifting/transferring. In 33% of the same group, wheelchairs rolling away were the cause of incident. Posttest this group showed an absence of frequency of incidents other than muscle strain.

Table 13
Percentage of Employee Incidents by Type Pre and
Post for the Experimental Group

Type	1	2	3	4	5	6	7	8	9	10	N
Pre	0	33	0	0	0	0	0	66	0	0	3
Post	0	0	0	0	0	0	0	100	0	0	2

During the pretest period all reported incidents of the employee control group were in the lifting (Type 8) category. During the posttest period a wide variety of reported incidents occurred as shown in Table 14. Frequency increased from 3 to 7.

Table 14
Percentage of Employee Incidents by Type Pre and Post
for the Control Group

	Type 1	2	3	4	5	6	7	8	9	10	N
Pre	0	0	0	0	0	0	0	100	0	0	3
Post	0	14.2	14.2	14.2	28.5	0	0	14.2	14.2	0	7

CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Two facilities took part in an experimental study where a program of inservice education was given in one and not the other. A total of 45 patients and three staff qualified for inclusion in the study. The facilities taking part in the study had patient populations of over 100 each and normal evening staff consisted of one charge nurse, two to three L.V.N.'s, one or two medication aides, and between four and seven nurse aides. Wheelchair dependent patients were chosen at random by the charge nurse. Those patients were then given an evaluation using their chart information and the P.G.R.S. Nurses aides were given the inservice questionnaire (See Appendix D) to complete. Due to the voluntary nature of the study, not all eligible nursing personnel participated in the study. Wheelchair related incidents were recorded over a period of six months.

Hypothesis one was not tested due to insufficient data. Hypothesis two was rejected. Significance (.018) proved an increase in self-care/wheelchair mobility skills for patients

of the experimental group. Hypothesis three was accepted. Although incident frequency decreased in the experimental facility, patients continued to have the same type of incidents. Experimental facility employees also had fewer incidents but the mean intensity increased. Chi square values of Tables 6, 7, 9, and 10 may be difficult to evaluate due to minimal acceptable cell frequencies.

Conclusions

A previous study based success of inservice education on the consistency of the educational program, the cooperation of the facilities, and the job stability of the employees.

Simply stated, any inservice program must have a stable employee population, i.e., low staff turnover, in order to succeed. Success may be defined as improvements in the overall patient population's level of function, the morale and attitude of the employees, and a reduction in the frequency and intensity of accidents in the facility (Hackley, 1959).

As a pilot study, this research has shown the potential value of inservice education by an increase in patient self-care in the experimental group and by a reduction of accidents incurred by both patients and staff of the experimental

group facility where inservice education was given. Due to high turnover of staff, decreases in frequency of incidents among both patients and staff were not statistically supported. As is reported in the literature, injuries during transfers share highest frequency with muscle strain occurring during those same activities. It is apparent that without inservice education or prior knowledge of proper body mechanics, this type incident will continue to plague ECF personnel. This study has also shown that an intermittent program of inservice education cannot be expected to succeed; especially when coupled with high employee turnover.

Recommendations

1. Inservice education must be ongoing within the facility.
2. When teaching adults performing as nurse aides, the "doing" component of learning is not only essential; it will be the difference between an aide who knows how and one who thinks he knows how but causes injury or damage.
3. The provision of pre-employment inservice education could help to simultaneously screen prospective employees for capabilities and teach correct procedures at the outset of employment. This would help to limit the number of job

seekers who were unqualified for the tasks required, and would help to prevent accidents incurred by employees using improper techniques.

4. Nurse aides giving inservice education to patients need to be sure that the wheelchair dependent patient is given adequate time, in the patient's frame of reference, to accomplish their self-care tasks. A safe and secure mental, emotional, and physical environment must prevail. The patient learns that the brakes are always locked on the wheelchair except during movement. The patient is also taught and reminded repeatedly to push up from the surface on which they are sitting rather than holding onto the aide or pulling on furniture to stand. Patients should also be shown the potential obstacles in their environment and how to circumvent them.

5. Provision of inservice education on body mechanics also appears to be essential to the reduction and/or prevention of the most common and frequent incidents experienced in ECF's--injury during transfer and accompanying muscle strain during lifting.

Concerning the replication of this study:

1. The patient evaluation was inadequate to measure the true mobility level of function of the patient population under study. An evaluation which included direct problem solving tasks for patients might serve as a better data base.

2. The employee inservice questionnaire might not be the best approach to testing for skills related to this or any other subject of study. A better approach might be observation of the nurse aides during the performance of their daily tasks, using a checklist for adherence to accepted procedure. This is suggested due to sometimes limited literacy among this particular population.

3. A greater number of subjects especially in the area of nurse aides would have given a much higher level of reliability to this study.

APPENDIX A

LETTERS OF PERMISSION FROM FACILITIES



Denton Nursing Center

2229 Carroll Blvd. • Denton, Texas 76201 • 817/387-8508

May 28, 1981

To; Noel S. Levan O.T.R.

Dear Noel,

After reviewing your thesis proposal and discussing your plans with our owners, we are happy to invite you to persue your project in our facility. We are looking forward to working with you and we feel the project will be mutually beneficial.

Sincerely,

Art Shields dml

Art Shields

Administrator

GOOD SAMARITAN

Denton Good Samaritan Village
2500 Hinkle Drive • Denton, Texas 76201 • (817) 383-2651

June 5, 1981

To Whom It May Concern:

Mr. Noel Levan has requested the use of Good Samaritan Village for his research project. As I understand, Good Samaritan Village will be the control group for his project and will involve the completion of a pre- & post questionnaire by the 3 - 11 nursing staff and access to our incident records. Mr. Levan has also agreed to do an inservice for all 3 nursing shifts on wheelchair safety when he has completed his project, and to give Good Samaritan Village one copy of his paper for our library. Mr. Levan has my permission to conduct his research project at Good Samaritan Village.

Margaret Brown

Margaret Brown
Training & Volunteer Coordinator

**in CHRIST'S love,
everyone is someone**



APPENDIX B

PATIENT EVALUATION FORM

Patient Evaluation Form

Patient Name _____ M ___ F ___ Age _____

Room # _____

Chart I.D. # _____ Admit. Date _____

Admitting Diagnoses _____

Precautions _____

Medications _____

Wheelchair Type _____

Orientation _____ X3 _____ X2 _____ X1 _____

Wheelchair Orientation ___ Yes ___ No

Can Patient Demonstrate Brake Use? ___ Yes ___ No

Transfer Status ___ Independent ___ With Assist. ___ Dependent

Parachek Evaluation

Initial Evaluation Scores _____

Follow-Up Scores _____

Totals _____

APPENDIX C

THE PARACHEK GERIATRIC RATING SCALE (PGRS)

The Parachek Geriatric Rating Scale (PGRS)

(For purposes of this study, value descriptions have been altered to fit the population.)

Physical Condition

Ambulation

1. Deteriorative disease. (Parkinson's, M.S., etc.)
2. Non-ambulatory. (uses Geri-Chair only)
3. Partially ambulatory. (uses W/C, transfers with assist/independently)
4. Partially ambulatory, (uses W/C, walks with device parttime)
5. Full ambulation.

Eyesight

1. Totally blind.
2. Sees light and shadow.
3. Sees to walk in lighted areas alone.
4. Recognizes most people by sight.
5. Sees to read and/or do hand work.

Hearing

1. Totally deaf.
2. Recognizes that there is sound but cannot distinguish what is said.
3. Has hearing aid or understands if voice is raised.

4. Has some difficulty but can usually understand what is said.
5. Hears well.

General Self-Care

Toilet Habits

1. Totally incontinent.
2. Control of bowel but not bladder.
3. Little control but signals when needing help.
4. Intermittant incontinent episodes, but remembers most of the time.
5. Independent bathroom use.

Eating

1. Fed totally.
2. Eats when coaxed and fed, goes to dining room.
3. Cooperates with aide and can take liquids by self.
4. Can handle tableware, feeding self with minimum supervision.
5. Feeds self regularly with no difficulty.

Hygiene

1. Must be bathed by aides.
2. Can have tub bath with help.
3. Bathes self with help and supervision of aides.
4. Bathes or washes when reminded.
5. Keeps self clean, bathing at will.

Grooming

1. No self-care.
2. Appreciates efforts of aides when dressed and groomed.
3. Asks for assistance and helps as much as possible.
4. Attempts to groom self, when reminded and supervised.
5. Grooms self regularly and independently.

Social Behaviors

General Level of Activity

1. Never involved in activities available.
2. Attends activities when brought but does not participate.
3. Attends activities, may be involved part-time.
4. Attends activities, actively involved.
5. Attends activities, keeps busy all the time.

Individual Responses

1. Responds minimally and/or inappropriately to attention of aides.
2. Responds appropriately to attention of aides.
3. Attempts to initiate conversation, or make needs known.
4. Has friendly relations with one other patient and/or staff.
5. Has friendly relations with patients and staff.

Group Activities

1. Shows no recognition of ongoing activities.
2. Responds minimally if attention is directed.

3. Will join group as passive participant if coaxed.
4. Participates in conversations and/or plans. Does not initiate.
5. Initiates plans and conversation.

Raw Data PGRS Scores

The first line of data represents initial evaluation scores. Last two digits are the total. The second line represents the follow-up evaluation and its total. The first 21 groups are control group data. The following 24 groups are of the experimental responses.

2	4	4	3	4	3	2	2	2	2	28
2	4	4	2	3	2	2	2	2	2	25
4	4	4	5	5	4	4	4	5	3	42
4	5	5	5	5	5	5	5	5	4	48
4	4	4	4	3	3	1	2	2	2	30
3	5	4	2	4	3	3	2	2	2	30
3	4	5	4	5	3	3	2	2	2	33
3	4	5	2	4	3	2	2	2	2	29
3	4	5	4	5	3	3	2	3	2	34
3	4	4	4	4	2	2	1	2	2	28
3	4	5	3	4	3	3	2	3	2	32
3	4	5	2	4	3	4	3	3	3	34
3	2	5	4	5	3	3	2	3	3	33
3	3	5	3	5	3	3	2	3	2	32
3	5	4	5	5	4	4	3	4	4	42
4	5	4	5	5	5	5	3	3	4	43
3	4	4	5	5	4	4	3	4	3	39
3	4	4	5	5	4	4	2	3	3	37

3	4	4	5	4	4	4	3	4	4	39
2	4	4	4	4	3	2	2	2	3	30
4	4	4	5	5	3	4	3	3	3	38
2	4	4	2	3	3	2	2	2	2	28
4	5	4	5	5	4	5	3	5	4	44
4	5	4	5	5	5	5	4	5	4	46
3	5	5	5	5	4	5	4	5	4	45
4	5	5	5	5	5	5	4	4	4	46
4	4	5	5	5	4	4	3	5	4	43
4	4	5	5	4	4	4	3	4	4	41
4	5	5	5	5	5	5	5	5	5	49
4	5	5	5	5	5	5	5	5	5	49
3	4	4	5	5	4	4	4	3	4	40
4	4	4	5	5	5	5	4	5	4	45
3	4	4	5	5	4	4	3	4	3	39
4	4	4	5	5	5	5	4	4	5	45
3	3	3	4	4	3	3	2	2	3	38
4	3	4	5	5	4	5	3	4	4	41
3	4	5	4	4	3	2	2	3	2	33
3	4	5	4	5	3	3	3	3	3	36
3	4	4	3	4	2	2	2	2	2	25
3	4	4	4	4	2	3	2	3	2	31
3	4	5	4	5	4	4	3	3	3	38
3	4	5	5	5	4	5	3	4	3	41

The following data are for the experimental group:

3	5	4	2	5	3	4	3	5	3	37
4	5	4	2	5	4	4	3	4	4	39
3	4	5	2	3	2	3	1	4	3	30
3	4	5	2	3	1	2	2	3	2	27
4	4	5	5	5	4	5	2	4	4	38
4	4	5	5	5	4	4	2	3	3	38

4	4	4	5	5	4	5	3	5	5	39
4	4	4	5	5	5	5	4	4	5	45
3	4	4	4	4	4	4	2	5	4	38
3	3	4	3	3	4	3	3	5	4	35
3	3	4	5	4	3	5	3	5	3	37
3	3	4	5	5	4	4	4	4	4	40
3	4	4	2	3	3	3	3	3	3	31
3	4	4	2	3	3	3	3	3	3	31
2	3	4	3	4	2	2	2	3	3	28
4	3	4	3	4	2	2	2	2	2	28
3	3	3	4	5	3	2	1	5	3	29
4	3	3	3	5	2	2	2	3	2	29
2	5	5	3	5	3	4	2	5	4	38
4	5	5	3	5	4	4	2	5	4	41
2	4	4	4	3	3	3	1	5	5	34
3	4	4	4	4	3	3	1	3	3	31
3	2	4	5	5	3	4	1	4	3	34
3	2	4	5	5	4	4	3	3	3	38
3	4	4	3	5	2	2	2	2	2	29
3	4	4	4	5	2	3	2	2	2	31
3	3	4	2	5	4	3	1	2	2	29
2	3	4	3	4	3	3	1	2	2	27
3	3	4	3	5	2	3	1	5	3	29
3	3	4	4	5	4	4	1	5	3	36
3	3	4	3	5	1	2	1	3	2	31
4	3	4	4	5	3	3	1	3	3	33
3	5	4	5	5	5	5	5	5	5	47
3	5	4	5	5	5	5	5	5	5	47
3	4	5	4	3	1	2	2	4	4	32
3	4	4	4	4	3	3	3	3	3	35
3	4	4	4	4	1	1	3	4	4	32
3	4	4	4	4	2	2	2	3	2	30

4	4	4	5	2	2	5	4	5	5	40
4	4	4	5	5	5	5	3	5	5	45
4	5	5	2	5	4	4	2	2	4	37
4	5	5	4	5	4	5	2	3	4	41
4	5	5	5	4	5	5	3	5	4	43
4	5	5	5	5	4	4	4	4	4	44
4	4	4	3	5	3	3	2	3	2	33
3	4	4	4	5	3	3	3	3	3	35
3	4	4	5	5	4	4	3	4	3	36
3	4	4	5	5	4	4	4	4	4	41

APPENDIX D

INSERVICE QUESTIONNAIRE

Inservice Questionnaire

Cover Sheet for Pretest/Posttest Inservice Questionnaire

Name _____ Date _____

How long have you worked at this extended care facility?

_____ years _____ months

Have you ever attended inservice education concerned with the subject of wheelchairs and/or wheelchair management? Check one please. Yes No

Approximately how many patients do you work with during your shift? _____ patients

Of those patients, how many are wheelchair dependent? _____ patients

Please read the following statements and sign in the space provided.

* * * * *

I understand that the return of this questionnaire constitutes my informed consent to act as a subject in this research study.

I understand that my participation is voluntary and that I may withdraw at any time.

I understand that no medical service or compensation is provided to subjects by the University as a result of injury from participation in research.

Please sign your name on above line.

Date

* * * * *

Answer the following questions by circling the correct choice only.

- True 1. When transferring a patient from a bed to a wheel-
False chair, the brakes must be locked on the wheelchair
first.
- True 2. A patient with an indwelling catheter should hold
False the catheter bag during transfers to and from the
wheelchair.
- True 3. During wheelchair transfers, bending at the waist
False to assist the patient is good body mechanics.
- True 4. When transferring a patient into or out of a
False wheelchair, the front wheels are always turned
toward the front.
- True 5. The wheelchair must fit the patient correctly in
False order to provide the optimum position for the
patient to carry out life task skills.
- True 6. Before putting a patient into a wheelchair, a
False safety check is appropriate to insure the
patient's safety.
- True 7. A person holding the wheelchair from behind is
False the same as having the brakes locked on the
wheelchair.
- True 8. A lap tray is a restraining device for patients
False in Geri-Chairs.
- True 9. The footrest on Geri-Chairs is not adjustable.
False
- True 10. The correct distance from the front of the
False wheelchair seat to the back of the leg is 1/2".
- True 11. When fitting a patient for a wheelchair, the arm
False rests should fit snugly under the arm pits of
the patient.
- True 12. You have been asked to assist a patient who is
False confused at times. You first provide the assist-
ance and then tell the patient what you have done.

- True
False
13. Given a patient with left hemiplegia (left sided paralysis) the correct place for the wheelchair during a transfer to a wheelchair from a commode is on the right side of the patient.
- True
False
14. Part of your responsibility to the patient is to make sure to the best of your ability that they are safe when using their wheelchairs.
- True
False
15. You are about to transfer a patient from his bed to a wheelchair. This patient has been hospitalized with a diagnosis of C.V.A., and he appears to have a paralysis on the right side of his body. As the patient sits on the bed with his right hand toward the head of the bed, the wheelchair will be placed on the left side of the patient, facing toward the head of the bed.

Answer the following questions by placing the correct letter in the space at the left of the question.

- ___ 1. Correct body mechanics requires the person assisting with a transfer of a patient from a wheelchair to a commode to. . . .
- a. bend at the waist, lift with arms extended in front.
 - b. bend at the knees, keep the back straight.
 - c. stand straight, lean over the patient as necessary.
 - d. bend at the waist, using the back muscles to lift.
- ___ 2. When transferring the patient, which should be observed?
- a. proper body mechanics.
 - b. obstacles on and around the patient.
 - c. non-functional extremities.
 - d. obstacles in the immediate environment.
 - e. all of the above.

- ___ 3. You are about to transfer a patient into a wheelchair. You notice that the brakes don't work right. You. . . .
- transfer the patient and tell the nurse about it.
 - transfer the patient and take him to activities.
 - transfer the patient and tag the wheelchair.
 - tag the wheelchair for repair and get another wheelchair that works correctly.
 - ignore the brakes and transfer the patient with the help of another person.
- ___ 4. Which of the following are part of the wheel assembly of the wheelchair?
- wheelchair frame
 - upholstery
 - axle nut
 - brakes
- ___ 5. When transporting a patient in a Geri-Chair, you. . .
- pull the Geri-Chair by the handle.
 - push the Geri-Chair for patient safety/orientation.
 - pull the Geri-Chair for ease of maneuvering.
 - push the Geri-Chair for proper body mechanics.
 - (b and d)
- ___ 6. You are about to transfer Mr. Jones (who weighs over 200 pounds) from his wheelchair to his bed. As you begin the transfer his wheelchair rolls away. You manage to get him back into his wheelchair and you. . . .
- push the wheelchair back against the dresser and try the transfer again.
 - take Mr. Jones and his wheelchair to the person who fixes them.
 - you call for the nurse at the desk to come and hold the wheelchair while you transfer the patient.
 - call for two people to assist you; one to hold the wheelchair and the other to assist you with the stability of Mr. Jones.

- _____ 7. Mr. Smith has had both legs amputated below the knee. Which wheelchair does he need to use?
- a. a regular wheelchair with arm and foot rests.
 - b. amputee wheelchair with removable arm rests.
 - c. motorized wheelchair with reclining back rest.
- _____ 8. Mrs. Smith needs assistance with her activities of daily living. You help her best by. . . .
- a. telling her to do what she can and you will help her with the parts she has trouble with.
 - b. doing whatever she needs done as you have other patients to work with.
 - c. talking with her to know what she is able to do on her own and what she will need help with. Then giving her only the help she needs.
 - d. doing everything for her.
- _____ 9. You are asked to transfer a patient with an indwelling catheter from her bed to a wheelchair. During the transfer you. . . .
- a. have the patient hold the catheter bag.
 - b. place the catheter bag on the wheelchair side, so it doesn't interfere with the transfer.
 - c. leave the catheter bag on the bed.
 - d. hold the catheter bag yourself.

Complete the following questions:

1. List two items on the wheelchair which should be checked before transferring a patient to a wheelchair.
2. There are four parts to be checked for safety on the back wheels of the wheelchair, name two.

END OF TEST!

Raw Data Inservice Questionnaire Responses

Values are read as follows:

First Values= (1) group I, (2) group 2.

Second Value= identification code of employee.

Third Value= time in months at current job.

Fourth Value= (1) has had inservice in subject area,
(2) has not had inservice.

Fifth Value= number of patients handled during shift.

Sixth Value= number of wheelchair dependent patients
during shift.

All successive values pertain to test answers.

(1)= True. . . (2)= False

Where the second value is repeated in the following line, a follow-up questionnaire was secured.

1	1	.03	2	-9	-9	1	2	2	2	1	2	1	1	2	2	2	2	1	1	2
						C	E	D	D	E	D	D	C	B	1	0	1	1		
1	2	.06	1	50	50	1	1	1	1	1	1	1	1	2	1	2	2	1	1	1
						A	E	A	A	E	A	C	D	1	1	1	1			
1	3	.06	1	50	25	1	2	2	1	1	1	2	1	2	1	2	2	1	1	1
						B	E	D	D	E	D	C	B	B	1	1	0	0		
1	3	.18	1	50	25	1	2	1	1	1	1	1	1	2	2	2	2	1	1	1
						B	E	D	D	E	D	A	C	B	1	1	1	1		
1	4	.09	2	40	40	1	2	2	1	1	2	2	2	2	2	1	1	1	1	2
						C	A	D	D	A	D	A	C	C	1	1	1	1		
1	5	.03	2	40	40	1	2	2	1	1	2	2	2	1	1	2	1	1	1	1
						A	E	D	D	B	D	A	C	C	1	1	1	1		
1	6	.24	1	35	25	1	2	2	2	2	1	2	1	1	1	2	2	1	1	1
						B	E	D	D	E	D	A	D	B	1	1	1	0		
1	6	.50	1	35	25	1	2	1	1	1	1	1	1	2	2	2	2	1	1	1
						B	E	D	D	E	D	A	C	B	1	1	1	1		
1	7	.09	2	25	25	1	2	2	1	1	1	2	1	2	2	2	2	1	1	1
						B	E	D	D	A	C	B	D	C	1	0	1	0		
2	1	.09	2	25	25	1	2	2	1	1	1	2	1	2	2	2	2	1	1	1
						B	E	D	D	A	C	B	D	C	1	0	1	0		
2	2	1.0	2	25	7	1	2	2	1	1	1	2	2	1	2	2	2	1	1	1
						B	E	D	C	E	D	C	C	B	1	1	1	1		

2	3	.09	1	50	21	1	1	1	1	1	1	2	2	2	1	2	2	1	1	1
						B	E	D	C	E	D	C	C	A	1	1	1	1		
2	4	.06	2	24	13	1	2	2	1	1	1	2	2	2	1	2	2	1	1	1
						B	E	D	C	E	D	C	C	D	1	1	0	0		
2	5	.08	2	8	6	1	2	2	1	1	1	1	1	2	2	2	2	1	1	1
						B	E	A	D	E	D	A	C	A	1	1	0	0		
2	5	.24	2	10	5	1	2	2	1	1	1	1	1	2	1	2	2	2	1	1
						B	E	A	C	E	D	C	C	D	1	1	1	1		
2	6	.03	2	21	20	1	1	2	1	1	1	1	1	2	1	1	1	2	2	1
						C	D	A	A	D	E	C	D	A	A	1	1	0	0	

The following is the answer key:

1 2 2 1 1 1 2 2 2 2 2 2 1 1 1 B E D C E D C C B 1 1 1 1

APPENDIX E

ACCIDENT KEY

Accident Key

Positional order of information presentation:

1st: the month in which the incident occurred, 1-12.

2nd: a (1) for patient involvement,
a (2) for employee involvement.

3rd: the rating of the incident in intensity, as follows:

1= no first aid/no medication given,

2= first aid/no medications given,

3= first aid and non-narcotic medication given,

4= first aid, narcotic given, doctor called,

5= transferred to hospital for observation,

6= transferred to hospital for treatment,

7= transferred to hospital for surgery,

8= patient ceased.

4th: the time of the incident (0-2400 hours)

5th: the type of incident (1-10)

Type of accident:

1= Geri-Chair mishap,

2= wheelchair rolled away during transfer to/from,

3= collision,

4= shower chair or commode chair moved,

5= transfer fall,

6= restraint failure/improper restraint,

7= non-functional extremity injury,

8= muscle strain while lifting or transferring,

9= obstacles involved during procedure,

10= other.

6th: where the incident took place (1-7).

Raw Data Patient and Employee Incidents

For values identification see Accident Kay.

4	1	1	1200	0	0	1	0	0	0	0	0	0	3
4	1	3	1150	0	0	0	1	0	0	0	0	0	2
4	1	3	1150	0	0	0	0	1	0	0	0	0	2
4	1	3	1350	0	0	0	0	1	0	0	0	0	2
4	1	3	1715	0	0	0	0	1	0	0	0	0	2
4	1	1	1800	0	0	0	0	0	1	0	0	0	5
4	1	4	1300	0	0	0	0	0	1	0	0	0	2
5	1	3	1700	0	0	0	1	1	0	0	0	0	1
5	1	6	1800	0	0	0	0	1	0	0	0	0	2
5	1	4	1230	0	0	0	0	1	1	0	0	0	1
5	1	3	1900	0	0	0	0	1	0	0	0	0	7
5	1	3	1650	0	0	0	0	1	0	0	0	0	2
6	1	3	1040	0	0	0	0	1	1	0	0	0	2
6	1	3	1630	0	0	0	0	1	0	0	0	0	2
6	1	2	0930	0	0	0	0	0	1	0	0	0	2
6	1	4	1210	0	1	0	0	1	0	0	0	0	2
6	1	4	1150	0	0	0	0	0	0	1	0	0	3
7	1	1	0200	0	0	0	0	1	0	0	0	0	2
7	1	1	1530	0	1	0	0	1	0	0	0	0	3
7	1	1	1530	0	0	0	0	1	1	0	0	0	2
7	1	1	1500	0	0	0	0	1	0	0	0	0	2
7	1	1	0900	0	1	0	0	1	0	0	0	0	2
7	1	1	0200	0	0	0	0	1	0	0	0	0	2
8	1	1	1000	0	0	0	0	1	0	0	0	0	2
8	1	1	1500	0	0	0	0	1	0	0	0	0	2
8	1	1	0930	0	0	0	0	1	0	0	0	0	1
8	1	1	1700	0	1	0	0	1	0	0	0	0	2
9	1	5	0800	0	2	0	0	1	1	0	0	0	2
9	1	1	1400	0	0	0	0	1	0	0	0	0	2
9	1	2	1030	0	0	0	0	1	0	0	0	0	2
9	1	1	1800	0	1	0	0	1	1	0	0	0	2
9	1	1	2200	0	0	0	0	1	0	0	0	0	2
9	1	2	2100	0	0	0	0	1	0	0	0	0	2
9	1	1	2330	0	0	0	0	1	0	0	0	0	2
9	1	1	0100	0	0	0	0	1	0	0	0	0	2
9	1	1	0330	0	1	0	0	1	0	0	0	0	1
4	2	6	1600	0	0	0	0	0	0	0	1	0	2
4	2	4	1630	0	0	0	0	0	0	0	1	0	2
6	2	6	1900	0	0	0	0	0	0	0	1	0	2
7	2	4	1030	0	0	0	1	1	0	0	0	0	1
7	2	1	1330	0	0	1	0	0	0	0	0	1	3
9	2	6	1100	0	1	0	0	1	0	0	0	0	2
9	2	5	1100	0	0	0	0	0	0	0	1	0	2

4	1	6	1600	0	0	0	1	1	0	0	0	0	2
4	1	2	0900	0	0	0	1	1	0	0	0	0	1
4	1	1	1500	0	1	0	1	1	0	0	0	0	1
4	1	3	2200	0	1	0	0	1	0	0	0	0	1
4	1	2	2100	0	0	1	0	0	1	0	0	0	2
5	1	2	1520	0	1	0	0	1	0	0	0	0	1
5	1	3	2100	0	0	1	0	0	1	0	1	0	6
5	1	1	1100	1	0	0	0	1	0	0	0	0	2
5	1	2	1000	1	0	0	0	0	1	0	0	0	2
5	1	2	1400	0	1	0	0	1	1	0	0	0	2
5	1	5	0800	0	1	0	0	1	0	0	0	0	1
5	1	1	1800	0	0	0	0	0	1	0	0	0	2
5	1	2	1700	0	1	0	0	1	0	0	0	0	2
6	1	3	1400	0	0	0	1	0	0	1	0	0	1
6	1	3	1900	0	0	0	0	0	1	0	0	0	2
6	1	2	0700	0	0	0	1	1	0	0	0	0	1
6	1	7	1600	0	1	0	0	1	1	0	0	0	3
6	1	2	0900	0	1	0	0	1	0	0	0	0	1
6	1	1	1600	0	0	0	0	0	1	0	0	0	2
7	1	3	1430	0	0	0	0	1	0	0	0	0	2
7	1	2	1200	0	0	0	1	1	0	0	0	0	1
7	1	1	1330	0	1	0	0	1	0	0	0	0	2
7	1	2	1800	0	1	0	0	1	0	0	0	0	2
7	1	2	1500	0	0	0	0	1	0	0	0	0	2
8	1	3	1900	0	1	0	0	1	1	0	0	0	2
8	1	3	1030	0	0	0	0	1	1	0	0	1	2
8	1	3	1900	0	0	0	0	1	1	0	0	0	2
9	1	2	2100	0	1	0	0	1	0	0	0	0	2
4	2	3	1200	0	1	0	0	0	0	0	0	0	3
4	2	3	1730	0	0	0	0	0	0	1	0	0	2
6	2	4	2000	0	0	0	0	0	0	1	0	0	2
8	2	6	0800	0	0	0	0	0	0	1	0	0	1
8	2	6	0430	0	0	0	0	0	0	1	0	0	2

APPENDIX F

INSERVICE EDUCATION SYLLABUS

Inservice Education Syllabus

Wheelchairs and Wheelchair Patient Management

It is proposed that the information be prioritized for maximum effect in the work situation. An approximate breakdown of time spent per topic follows.

Safety.	25%
Body Mechanics.	20%
Transfer.	20%
Geri-Chairs	10%
Communications.	10%
Obstacles	5%
Wheelchair fit.	5%
Parts/Mobility.	5%

This author assumes an approximate presentation time of 50 minutes.

TOPIC: Safety

A safety check of the wheelchair before transferring a patient into it.

Items to be checked:

A. Rear wheel assembly

1. Axle nut
2. Hand rims
3. Tires
4. Spokes

B. Upholstery

1. Screws
2. Upholstery

C. Brakes

1. Types commonly seen in ECF
2. Proper and/or improper function

D. Adjustable and/or removable parts

1. Leg rests
2. Arm rests

TOPIC: Body Mechanics

The proper procedure to be used when transferring a patient into a wheelchair.

- A. Stress of the fact that "If you are not safe, the patient cannot be safe."
- B. Placement of the wheelchair
 1. Bedside
 2. Commode
 3. Chair/Sofa
- C. Correct body mechanics during transfer
 1. Momentum of patient
 2. Effective use of musculature for ease of transfer
 3. Dangers of poor body mechanics
- D. The patient; your roles together in the transfer effort.
 1. Communication with the patient about what is happening.
- E. Obstacles in the transfer path
 1. Non-functional extremities
 2. Patients with indwelling catheters
 3. Restraints
 4. Environmental obstacles
- F. Transfer techniques related to the wheelchair
 1. Position of the wheelchair
 2. Front caster position
 3. Brakes locked
 4. Transfer path clear of obstacles
 5. Adequate assistance for the patient

TOPIC: Geri-Chairs

General guidance for transportation and transfer of the patient in his vehicle.

- A. Why pulling the Geri-Chair is dangerous.
- B. Why pushing the Geri-Chair is appropriate.
- C. A note on sitting all day.

TOPIC: Fit

Proper fit considers:

- A. Circulation
- B. Patient mobility, and patient needs.

APPENDIX G

GUIDELINES FOR INSERVICE EDUCATION

Guidelines for Inservice Education

From the book: "Nursing Home Administration"

by McQuillan, 1974

Appendix B

Regulations/procedures for certification under Medicare.

#17. There is to be an ongoing inservice education program for nursing personnel and a period of orientation for new members of the nursing staff.

#18. There is to be an emphasis on restorative nursing. Patients are to be assisted in regaining an optimal level of independence in keeping with their physical status.

#32. Suitable activities, designed to serve the needs and the interests of patients are to be offered. Equipment and supplies adequate to satisfy a variety of interests are to be available. For further information see: State Regulations and Conditions of Participation for ECF's.

Booklet: J.C.A.H. Manual

Part I. Administration

Section D. Personnel Management

Orientation and Continuing Inservice Education

Each new employee shall receive a thorough, planned job orientation when first employed. In addition, a continuing inservice education program shall be developed and carried on to improve the level of services provided by personnel. This shall progress at a pace in keeping with the employee's ability in order to help develop maximum proficiency. An ongoing program, including instruction in interpersonal relationships as well as technical matters, tends to increase the employee's interest in his job; to assure good attitudes towards the patients, relatives, and other employees; and to reduce personnel regarding placements.

Part V. Nursing Services

Section B. Programs of Care

Subsection Interpretation

#2 Continuing Inservice Education programs, job orientation, and on job training. "Skill training includes demonstration, practice, and supervision of simple nursing procedures applicable in the individual nursing facility"

(McQuillan, 1974.

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