

THE EFFECTS OF AN INSERVICE PROGRAM
ON NURSE'S DOCUMENTATION BEHAVIORS

A THESIS
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF SCIENCE
IN THE GRADUATE SCHOOL OF THE
TEXAS WOMAN'S UNIVERSITY

COLLEGE OF NURSING

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MAY 1981

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March 3 19 81

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ACKNOWLEDGEMENTS

The researcher wishes to express a special thanks to the following individuals:

To Tim Philpot, administrator of John Peter Smith Hospital, and Nina Burke, assistant administrator of nursing services.

To my committee members, Jane Dawson, Chairperson, and to Lois Hough and Helen Bush.

Lastly, to my sisters, Alleyne Woods and Gloria Gilliam, for their love and support through this endeavor.

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CHAPTER 1

INTRODUCTION

There is a strong emphasis in nursing literature on the subject of continuing education for nurses. Many nursing leaders feel that continuing education is one of the most effective vehicles for the provision of safe and adequate patient care. In the hospital setting, the method often employed to provide such continuing education is an inservice program. These programs are often developed with the overall objective of increasing skill performance. Many resources are utilized in developing and implementing these inservice programs.

In addition to the emphasis on continuing education, there has also been considerable discussion concerning the topic of quality patient care delivery. The measurement of patient care service depends upon concise and reliable entries in the patient record.

Hospitals often measure the quality of patient care by use of chart audits. The purpose of these audits is to compare actual nursing practice with that of pre-established standards for practice. These standards are developed by committees composed of the entire health

care team which contribute to the development of guidelines for nurses as to the type and frequency of chart entries.

Inadequate documentation has been found in nursing chart audits. Several explanations have been offered for nurses' inadequate documentation behavior. Among these explanations are: (a) lack of motivation, (b) lack of education, (c) lack of time, and (d) general apathy toward paper work (Walker & Selmanoff, 1964). Other authors (Joint Commission on Accreditation of Hospitals, 1979; Paparone, 1980) have suggested that an inservice program may be helpful. Such a program would be designed to emphasize the need for more detailed and descriptive information as well as providing training for upgrading charting procedures.

If knowledge of the desired requirements of documentary behaviors would influence nurses to chart according to audit criteria, an education inservice program would seem to be the possible solution to the inadequate documentation problem. This study examined the effects of an inservice program on nurses' documentation behaviors.

Problem of Study

The problem of this study was to determine whether or not there is a difference in the quality of charted

documentations of data pertaining to pain and arrhythmias experienced by myocardial infarction patients before and after personnel have attended an inservice program based on Bruner's (1966) instructional concepts.

Justification of Problem

The role of the nurse has undergone many changes in the past decade. A generalized concept of role expansion for the nurse is often discussed and described in nursing literature. The expanded role involves additional responsibilities for the nurse. One of the reasons for this role expansion is an overall effort by health care providers to meet the increased health care needs of the public (Bullough, 1975).

The nurses' expanded role requires them to learn and perform some skilled procedures that usually are considered to be within the realm of medicine. (Bullough, 1975, p. 37)

A major component of this expanded role is placement of a strong emphasis on responsibility and accountability of nurses in their practice (Creighton, 1978).

In practice, the nurses' notes are used to document the care and treatment of individual patients. The quality of the patient record should reflect the quality of patient care. Nursing supervisors view nurses' notes as a tool for accreditation, a means of communication, an

indication of quality patient care, and proof of legal accountability (Billings, 1978). In malpractice cases the chart may be scrutinized by both attorneys and hospital administrators. The chart often becomes the single most important document in cases of litigation. Nurses' notes are often the focus of this scrutiny. If care factors are not documented, these care factors may be considered as not having been performed (Kerr, 1975).

One way to demonstrate care performance is through written documentation of nursing practice. These documentations could be used to show adherence to established standards and delineate those conditions necessary to provide quality nursing care for the needs of the patient.

Most general duty nurses readily agree that "charting" is a vital aspect of patient care. However, problems of poor recording behavior and discrepancies in chart audits, even from the most highly trained professionals, continue to reveal documentation gaps and omissions (Billings, 1978). A study at one hospital found that nurses spent a mere 28 seconds per patient each day in charting (Walker & Selmanoff, 1964).

The Joint Commission for Accreditation of Hospitals (1979) has established several standards for hospitals

to use as guidelines in the performance of health care delivery. Standard IV of the nursing care recommendations provides that

there shall be evidence that the nursing service provides safe, efficient, and therapeutically effective nursing care through the planning of each patient's care and the effective implementation of the plans. (Moore, 1972, p. 16)

One way nurses can demonstrate their adherence to the established standards of practice is by improving the quality of their documentations.

One reason for inadequate documentations by nurses could be insufficient education. This would imply inadequate knowledge of the audit criteria on the part of the nurse regarding information to be charted in the nurses' notes. According to the Franklin Research Center (1980)

continuing education is an integral part of professional nursing. It is the vital link to the many factors impacting on the provision of safe, adequate, and competent nursing care. (p. v)

However, continuing education can be very expensive.

It is estimated by del Bueno (1980) that "the cost for 20 hours of continuing education for 10,000 nurses would be \$1,000,000" (p. 34). Such costs imply the necessity for inservice program effectiveness.

This study provided some information that may be useful to nursing administrators who are concerned with

documenting deficiencies of their nursing personnel. This information might also be useful to administrators who are concerned with the overall cost of inservice programs.

Theoretical Framework

Bruner (1966) theorized that learning is an active process. The key concepts of Bruner's learning theory are categorizing/conceptualizing, coding, and problem solving. Categorizing or conceptualizing is describing, explaining, and sorting events by placing objects within categories. This categorization is based upon making an inferential leap from observed cues to the identification of a class of objects. Categories which are related are placed in a coding system. A coding system is a way in which individuals categorize, group, and relate information.

According to Bruner (1966) the process of learning includes connecting events or objects that are related into structures which give them significance. Learning involves three processes. These processes occur almost simultaneously: the acquisition of new information, transformation of knowledge, and checking the pertinence and adequacy of knowledge. The transfer of this knowledge

takes place through associating ideas, choosing between alternative actions, applying principles in real-life situations, and making generalizations. The role of the teacher in this process is to help the student set appropriate objectives and promote the use of problem-solving techniques. Bruner (1966) postulated that learning alters perception and behavior.

Bruner's (1966) theory of instruction was the model used in this study. A theory of instruction is prescriptive as opposed to learning theories which are descriptive. A prescriptive instruction theory tells how learning takes place and the most effective way of teaching for learning. A theory of learning is descriptive; it tells how learning takes or took place.

According to Bruner (1966) learning is often highly related to method of instruction employed. Bruner suggested that quality instruction can be characterized by four major features: (a) motivation, (b) sequence, (c) structure, and (d) reinforcement. The motivation feature of instruction

should specify experiences which most effectively implant in the individual a predisposition toward learning, learning in general or a particular type of learning. (Bruner, 1966, p. 40)

This feature examines the types of relationships between people and things that will tend to make them willing and

able to learn, and it considers and develops the student's interest.

Since learning and problem solving depend upon the exploration of alternatives, instruction must facilitate and regulate the exploration of alternatives on the part of the learner. (Bruner, 1966, p. 43)

The sequence feature asks teachers to know their own subjects well and present the materials in the most effective sequences.

Instruction consists of leading through a sequence of statements and restatements of a problem or body of knowledge that increases the learner's ability to grasp, transform, and transfer what he is learning. (Bruner, 1966, p. 49)

Bruner stated that the sequence of instruction is unique for different learners. Past learning stages, nature of the material, and individual difference all influence the instruction sequence. "Exploration of alternatives will necessarily be affected by the sequence in which material to be learned becomes available to the learner" (Bruner, 1966, p. 49).

The structure feature "must specify the ways in which a body of knowledge should be structured so that it can be most readily grasped by the learner" (Bruner, 1966, p. 44). The value of a structure is dependent on the simplification of information and the generation of new ideas (Bruner, 1966).

The reinforcement feature involves making sure the educational experience is a satisfying one.

A theory of instruction should specify the nature and pacing of rewards and punishments in the process of learning and teaching. Intuitively, it seems quite clear that as learning progresses there is a point at which it is better to shift away from extrinsic rewards toward intrinsic rewards inherent in solving a complex problem for oneself. (Bruner, 1966, p. 42)

Bruner (1966) theorized that people learn more quickly and better retain what is taught if the material is both interesting and meaningful. In keeping with Bruner's theory, an inservice program developed according to the four features of his theory should improve learning in a target group of individuals. This study applied the four features of his theory to determine the difference in documentation scores following an inservice program on nurses' documentation behaviors.

Assumptions

For the purposes of this study, the following assumptions were made:

1. Instruction is goal directed.
2. The method of instruction influences learning.

Hypothesis

The hypothesis for this study was:

There will be no difference in the quality of charted documentations of data pertaining to pain and arrhythmias experienced by myocardial infarction patients before and after personnel have attended an inservice program based on Bruner's instructional concepts.

Definition of Terms

For the purposes of this study, the following terms were defined:

1. Quality documentation behavior--written notations on the patient's chart as they meet the audit criteria.
2. Patient record--a compilation of data related to the patient's illness and care, including doctors' and nurses' notes.
3. Inservice program--an educational experience based on Bruner's instructional concepts.

Limitations

The limitations of this study were:

1. The sample size was small.

2. The patient records were from one nursing unit.
3. Only one diagnosis was used in this study.

Summary

An inservice program is one method used to assist nurses in dealing with the growing body of knowledge that enhances the skills needed in modern practice. The determination of the quality and quantity of patient care is dependent on documentations contained on the patient record. During the past decade the role of the nurse has changed significantly. One focus of change is on nurse's accountability in practice.

The patient record should reflect the quality of care delivered. In cases of malpractice, medical and nursing defense is only as good as the patient record. Inadequate documentation has been found during chart audits. Inadequate documentation implies inadequate practice. Lack of knowledge of required chart entries is one reason offered for inadequate documentations.

Bruner (1966) stated that learning is related to the quality of instruction. Instruction should include four features: (a) motivation, (b) sequence, (c) structure, and (d) reinforcement. Bruner felt that people

learn quicker and retain more if the material is interesting and meaningful.

If insufficient education is the reason for nurses' inadequate documentation behavior, an inservice program might offer a solution to the problem. This could be particularly true if the program were designed and implemented utilizing Bruner's (1966) instructional concepts.

CHAPTER 2

REVIEW OF LITERATURE

Four major subject areas are reviewed in this chapter. First, attempts to improve nurses' charting activities are discussed. Second, legal cases involving nurses are described. Third, previous studies dealing with inservice programs, and finally, studies performed using the audit process to evaluate nursing care are discussed.

Attempts to Improve Nurses' Charting Activities

Several attempts have been made to improve documentation of care through the use of various tools. One article revealed that some members of the nursing staff at Sinai Hospital of Detroit utilized the Becknell and Smith Clinical Nursing Assessment Tool (cited in Bartos & Knight, 1978) as one approach to improve charting. The patient care plan follows Mayer's (cited in Bartos & Knight, 1978) form which consists of a problem statement, nursing care provided, observations, the patient's response according to expected outcomes, and a discharge summary. Bartos and Knight (1978) have used this tool

for several years and have found it a successful method of documenting patient care. The system is not used throughout the entire hospital. However, these authors stated that "nursing staff from several areas are adopting this format" (Bartos & Knight, 1978, p. 42).

A different tool was developed by St. Mary's Hospital and Health Care Center staff, Tucson, Arizona to measure the performance of nursing processes. This tool replaced other charting procedures. It incorporated a daily patient progress record which used a check mark for items done and a zero for items not done. The patient progress record is based on a standard care plan that can be individualized according to that patient's needs. This process can be utilized manually but is extremely useful if a computer is available. Use of the tool provides (a) an improved basis for nursing audits, (b) simplified shift reports, (c) reduction in nurses' notes, (d) improved orientation of new nursing staff, and (e) a more consistent approach to nursing care (Ethridge & Packard, 1976).

The use of verbal and nonverbal feedback was the theme of an attempt by Jackson, Edmundson, and Green (1978). Their effort resulted in increased use of the

Kardex as a tool for recording nursing observations, assessments, and plans in a mental health unit. An instrument was developed to give nonverbal feedback regarding use of the Kardex and a role model was provided. Implementation of this tool allowed use of a noncritical approach, stimulated competition between shifts, and increased the use of the Kardex from 5.9% to 78.6% on the evening shift and from 46.3% to 93.2% on the day shift (Jackson et al., 1978).

In viewing another aspect of the documentation problem, a survey of nurses' notes done by Walker and Selmanoff (1964) revealed the following:

1. Nurses' notes do not serve as an important or effective means of communication between nursing personnel or between nursing and medical personnel.

2. The status significance of writing nurses' notes among professional nurses has diminished or is nonexistent.

3. Medical ward personnel consider nurses' notes more important (for diagnosis and communication of patient progress) than do surgical ward personnel. However, there is no significant difference in the amount of time spent charting between the two wards.

4. The frequency of omitted information in nurses' notes is high (62 out of 100 items) while the frequency of inaccurate information is low.

5. Nursing personnel consider writing nurses' notes as an instrumental function and not ritualistic "behavior which has some special significance to the actor rather than being primarily oriented to the achievement of organizational goals" (Walker & Selmanoff, 1964, p. 133).

Supporting the belief that a problem continues to exist in nurses' notes is a survey by Steckel (1976) in which the clinical area reviewed yielded minimal written evidence of nursing behaviors that makes up the "nursing process." Even though nursing personnel had adequate educational preparation and opportunity for staff development, nurses' notes were poorly executed. Poor documentation was felt to be due to a lack of incentive on the part of the nurse. Negative behavior did not result in punishment nor did positive behavior lead to reward or reinforcement. When nurses were allowed to choose their own rewards for an increased amount of charting done, the reinforcement periods revealed an increased number of charts written on, as opposed to the relatively low number during the baseline periods (Steckel, 1976).

Legal Cases Involving
Nurses

Kerr (1975) offered that "nurses' notes are where the goodies are" (p. 34). Kerr reported having heard this expression repeatedly at continuing education courses for trial lawyers who handle body injury and malpractice cases. Three reasons for this were cited:

1. When orders are written, the nurses' notes hold the only clue as to whether the orders were carried out and what the results were.

2. Nurses' notes are the only notes written with both time and date and strictly in chronological order.

3. Nurses' notes offer the most detailed information regarding the patient (Kerr, 1975).

According to Hershey and Lawrence (1976), the patient's chart is almost always introduced into evidence at the trial of a malpractice or negligence suit.

When the chart is unreliable as an indicator of care rendered to the patient, it is more likely that the plaintiff's suit will be successful. Inadequate, misleading, or otherwise deficient documents may seriously inhibit the successful defense of a legal action. (Hershey & Lawrence, 1976, p. 35)

One example of such charting is the case wherein a woman sustained injury during and immediately after giving birth. A nurse delivered the baby in an emergency

situation. The nurse had summoned a physician from the hallway just as the baby was being born. The nurse actually delivered the baby, but she charted the passing physician as the delivering person. She did this on the advice of her supervisor. The court found that "if the records were erroneous in one respect, they were erroneous in other respects also" (Hershey & Lawrence, 1976, p. 35).

Jurors were also significantly influenced by the apparent alteration of patient records in a case that involved an infant who suffered a sciatic nerve injury. The plaintiff charged an improperly performed injection in the left buttock. Several months after the incident and the subsequent manifestations of motor power impairment, the attending pediatrician, who was aware of the possible claim, made an entry in the records which stated the medication was given orally. The court ruled

the word orally is in darker type and extends into the right margin, suggesting that it was typed into the letter at some time after the letter's completion. (Hershey & Lawrence, 1976, p. 36)

A case of destruction of records cited an incident where an emergency room nurse was unable to contact a patient's physician and subsequently sent the patient

home. The patient, a diabetic, had presented "suffering from abdominal pains and vomiting" (Hershey & Lawrence, 1976, p. 36). Several hours after being sent home the patient was returned by ambulance and subsequently died. The autopsy report found the cause of death to be an acute myocardial infarction and arteriosclerosis secondary to diabetes. A search for the emergency room record proved fruitless. The court allowed the jury to infer from the apparent destruction of the records that, had they been available, the records would have shown that an emergency situation existed at the time of the patient's first visit to the emergency room, and that he had been sent home without the opportunity to be seen by a physician (Hershey & Lawrence, 1976).

Several other cases cited involved the absence of data in the medical records. One case involved the failure of the nurse to chart an infant's temperature. The infant patient's temperature was of great importance in the case because a suit was brought for a central nervous system disorder allegedly caused by the infant being kept in an overheated incubator for a substantial period of time soon after her premature birth (Hershey & Lawrence, 1976).

In another case the nurse failed to show evidence in the record that the physician's orders were followed. The orders read "watch condition of toes." The patient had a fractured leg and due to irreversible ischemia, his leg had to be amputated. The nurses' chart entries failed to show abnormal findings or that the required observations were made. Judgment against the hospital was based on this evidence (Hershey & Lawrence, 1976).

The rationale for maintaining accurate and complete patient care records is that such records contribute to good quality care and reduce the likelihood of some kinds of patient injury. Whether the nurse is serving patients at their home or in the hospital setting, the nature of the charting responsibilities remains the same. "The chart can show who, of those responsible for patient care, failed to meet the standards of competent professional performance" (Hershey & Lawrence, 1976, p. 37).

Authorities at the Health Law Center (cited in Steriff, 1975) stated:

The increasing incidence of personal injury suits and the expanding acceptance of life, accident, and health insurance have made medical records important evidence in legal proceedings. (Steriff, 1975, p. 31)

Steriff (1975) further stated that

the medical record must be both accurate and complete. Failure to comply with minimum record maintenance standards set out in state statutes may cause the revocation of medical personnel licenses of hospital accreditation. (p. 33)

One case was cited that demonstrated the result of inadequate recordings on the part of the nurse. It involved a Washington, D. C. case where the state Supreme Court imposed liability on a hospital for the nurse's failure to observe and record the symptoms of eclampsia. The court attributed the patient's subsequent death to this failure because "the physician might have ordered the prompt and necessary treatment if the information had been available" (Steriff, 1975, p. 33).

Another example of the law in nursing (Steriff, 1975) is a Louisiana case where the hospital and radiologist were held liable for injuries sustained by an elderly patient who fainted and fell while being x-rayed. The hospital was liable under Respondeat Superior for the failure of a nurse to complete the medical history portion of the x-ray requisition. The basis of the radiologist's liability was "the failure to acquaint himself with the patient's history before he commenced the examination" (Steriff, 1975, p. 33).

A general review of charting at a large psychiatric hospital revealed an absence of relevant information that could have been very damaging in a malpractice suit. The nurse documented the patient's statement regarding his intent to kill himself but she failed to document what she did with this information. The need for defensive documentation was noted (Byrd, 1977).

An actual case exemplifying defensive documentations was reported by Creighton (1975) where a nurse was charged with striking and knocking down a patient while administering a routine medication. The nurse was successfully able to defend herself due to the clear and concise charting regarding the actual conditions under which the patient fell.

In an Oregon case decision, a patient was awarded \$750,000 for sustaining permanent brain damage. The patient claimed he was unable to breathe properly following surgery due to massive overdoses of narcotics. The patient also claimed he was inadequately monitored during this period by the medical and nursing staff. There was no notation of the patient's respiratory status in the recovery room notes although the section was provided for charting of respirations. The court ruled that had

the nurses monitored the rate and depth of the patient's respirations they could have administered adequate oxygen and prevented the patient's brain damage. The nurse was sued independently because of the hospital's policy on charting. As evidenced by the forms, the respiration rate should have been charted on patients. The nurse deviated from hospital policy (Creighton, 1980).

There is a clear and demonstrated need for nurses to learn to be more complete in their charting behaviors. Hospitals are using planned teaching programs to add to the nurses' knowledge of documentation requirements.

Previous Studies Dealing with Inservice Programs

An inservice program is a planned educational experience that is provided in the hospital setting and identified with service. The purpose of inservice is to help a person perform more effectively. It can be defined as "a deliberate enterprise to enlarge the role of intelligence, awareness, and knowledge in the arena of decisions and actions" (Association of Operating Room Nurses, 1978, p. 763).

The Joint Commission on Accreditation of Hospitals (1979) stated in their manual of hospital requirements

that an inservice education program should be provided for the improvement of nursing care and service. The purpose would be to increase the proficiency and knowledge of nursing personnel. The program should be designed to keep the nursing staff up to date on new and expanding nursing care programs and new techniques, equipment, facilities, and concepts of care. "The inservice program must be planned, scheduled, documented, and held on a continuing basis" (Joint Commission on Accreditation of Hospitals, 1979, p. 107).

del Bueno (1977) conducted an experimental control, pretest and posttest study to determine whether continuing education affected the performance behavior of nurses. Specific learning objectives and observation of performances were used. Two hypotheses were tested: (a) the effect of an inservice program on information giving behavior, and (b) the effect of the inservice program on the nurse's ability to question doctor's medication orders.

The study was conducted in 10 hospitals and 101 nurses participated. The nurses were registered nurses who worked in various areas of their respective hospitals. Hospitals were designated as control or experimental based

on their policies regarding inservice, the willingness of the hospitals to release staff for 10 hours of continuing education, and the hospital's practice for testing staff on pharmacology knowledge (del Bueno, 1977).

The continuing education program consisted of 10 hours of pharmacology review and nursing implications. The participants received a copy of the course objectives. It was expected that experimental participants would give more information to patients and would be able to question more orders after receiving the education program (del Bueno, 1977).

The expectation that nurses would be able to question more orders after receiving the education program was supported. The expectation that nurses would give more information to patients was not supported. One reason offered for the lack of total success of the inservice program was the teaching methods used. These methods were case study discussion and lecture.

Forni and Averman (1974) conducted a survey to answer the question of whether continuing education has an effect on the practice of nursing. Forni and Averman (1974) stated:

It is assumed that education programs and experiences may assist in acquisition of information, increasing competency in motor skills or bringing about appropriate changes in attitudes, and it is generally assumed that changes in these factors have direct positive effects on patient care.
(p. 44)

However, Forni and Averman (1974) found no evidence to support their assumptions. A survey questionnaire was sent to 68 members of a consortium asking them to report on five educational programs. The 68 members consisted of 7 state nurses' associations, 28 senior college nursing programs, and 33 junior college nursing programs. Fifty-nine percent responded, with 11 stating they had no continuing education. The respondents stated that their courses were developed from demonstrated needs, but gave no evidence of this being done in an objective fashion. They were derived from perceived, not demonstrated, needs. Also, although the respondents stated the objectives for the programs were written in behavioral terms, many samples did not identify specifically which behaviors were expected. Forni and Averman (1974) concluded that the question regarding the presence of evidence of the effect of continuing education upon the practice of nursing could not be answered unequivocally by their study.

From the survey it does not appear that sufficient significant affirmative results can be reported to lay the question to rest. The problems associated with obtaining definitive results are primarily methodological and are concerned with developing precise statements of course objectives in terms of changes to be expected in the practice of nursing and the development of appropriate methods for determining whether such outcomes have occurred. (Forni & Averman, 1974, p. 51)

A study by Trussel and Crow (1977) investigated medical asepsis as a part of orientation and nurses' subsequent practice in specific nursing situations. Thirty-five graduate nurses employed during a 5-month period were numbered serially, with the odd numbered nurses not receiving the 2-hour orientation in medical asepsis and the even numbered nurses receiving no orientation. A pretest and posttest consisting of 12 items focusing on practices of medical asepsis was given to both groups. A third test consisted of yes/no observations made by the infection control nurse of the practice of medical asepsis for each nurse in the study. Before/after scores of the newly employed graduate nurses in both groups were compared statistically. Observation scores of actual practice were also compared for those who had the 2 hour orientation and those who did not. Two findings were apparent: the 2 hour orientation increased knowledge and improved the practice of newly employed nurses, and the

nurses expressed benefits to themselves of having their practices observed by the infection control nurse. The observations of the infection control nurse provided feedback to each nurse in the study (Trussel & Crow, 1977).

Inservice programs are the methods most often utilized in the hospital setting to teach nursing staff. The overall goal of these inservice programs is to improve the quality of patient care delivery. The evaluation of nursing care is a vital component of nursing practice.

Audit as a Means of Evaluating Nursing Care

Nursing audit is one method used to evaluate nursing care. Phaneuf (1976) stated that the purpose of the audit process is to

assess the quality of the nursing process through appraisal of the way in which the seven functions of nursing are executed in behalf of patients, with results that are subject to statistical analysis in the interests of nursing accountability and that can be used in systematic efforts to improve the quality of care. (p. 45)

This is done through the use of criterion measures.

In the audit, the seven functions of nursing are used as objectives to be attained by nurses in the care

of patients. These functions are considered to be the components of the nursing process and, as such, are subject to measurement. Phaneuf (1976) listed these functions as:

1. Application and execution of physician's legal orders.
2. Observations of signs and symptoms and reactions.
3. Supervision of the patient.
4. Supervision of those participating in care (except the physician).
5. Reporting and recording.
6. Application and execution of nursing procedures and techniques.
7. Promotion of physical and emotional health by direction and teaching. (p. 45)

According to Wandelt (1970), a criterion measure is a quality, attribute, or characteristic of a variable that may be measured to provide scores by which subjects or things of the same class may be compared with respect to the variable. (p. 314)

In this context, Wandelt (1970) stated a variable is

a measurable component of an object or event that may fluctuate in quantity or quality, that may be different in quantity or quality from the individual object or event to another object or event of the same general class. (p. 314)

According to Phaneuf (1976), the chart is a service instrument that provides documentation of care provided. Recording on the chart is a part of one of the seven functions of nursing.

At the Mainland Division of the Atlantic City Medical Center (Paparone, 1980), the audit process was used to determine the effectiveness of inservice program's ability to improve patient care. A calendar of inservice programs was developed by the inservice coordinator and nursing staff for a 1 year period. Each month the focus of the inservice changed to coincide with the disease most often admitted for that month. For example, the highest incidence of respiratory disorders was experienced during November so the scheduled focus for that month was respiratory care. The score of the inservice program extended from the traditional short-term and crisis oriented focus to a structured long-range purposive focus. The structure of the inservice programs included health assessment, critical care concepts, and standards of care.

The method employed by Paparone (1980) to evaluate nursing care was the process and retrospective audit. Both inservice personnel and staff nurses noted an increase in accountability regarding teaching and learning after the first month's inservice program. They also noted that they had assimilated new knowledge that enabled them to improve patient care. The statistical

analysis of these changes was not reported by Paparone (1980).

Paparone's (1980) study asked the question, "Does inservice education accomplish the goal of providing nurses with new tools and information to enhance their practice?" Paparone stated that used effectively, "in-service education can be employed to motivate staff and provide the impetus for change" (p. 29).

In 1980, Merkel, McGugin, and Hofing used three techniques to evaluate a problem oriented record educational program designed to increase knowledge and change behavior. Merkel et al. (1980) used subjective evaluations, pretest and posttest exams, and the chart audit review to evaluate the program. The program was presented in a self-instruction modular series and allowed for frequent feedback and self-testing. According to Merkel et al. this provided a valuable source of motivation for the learner. The subjects for this study were the nursing staff at University Hospital in Ann Arbor, Michigan. The total staff consisted of 150 registered nurses, licensed practical nurses, and nursing students. Tests were administered to provide base pretreatment and post-treatment data. Two groups of subjects were tested.

One group had previously implemented problem oriented record programs and the other group had not. Pretests totaling 125 and posttests totaling 62 were returned. This was the source for pretreatment and posttreatment data.

A comparison of pretest and posttest scores showed the group with previous experience in using the problem oriented record program to have higher pretest scores than the group who had no experience, however, posttest scores of both groups were similar. An audit of seven charts showed 75% of the flow sheets were not completed and of two transfers performed, one chart had no transfer note charted. Temporary problems were noted in the chart but there was no indication on the chart that the problem was resolved. Merkel et al. (1980) stated, "In a chart review one assumes that the information recorded reflects the care given" (p. 68). It was found that the overall audit results were positive and that based on the records and test results the problem oriented record educational program produced positive results in the delivery of patient care.

Summary

The problem of nurses' inadequate documentations has been a major concern of hospital and nursing administrators for a number of years. The review of selected studies concerning the use of tools to improve nurses' documentations showed them to be an effective method to improve documentations when reinforcement for this behavior was provided. The patient record is evidence of patient care. The results of an inadequately documented patient record has been shown to be very costly to the nurse and the employing hospital.

The literature indicates that nurses' charting behaviors are inadequate when audit is used as a measure of care. Based upon the previous literature, inservice educational programs were identified as an appropriate method to increase and/or modify nurses' documentation behaviors.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

Descriptive correlation research was the type used for this study. According to Polit and Hungler (1978), the aim of descriptive correlation research is to describe the relationship among variables rather than infer cause and effect relationships.

Descriptive research is present oriented research that seeks to describe accurately what is and analyze the facts obtained in relationship to the problem under study. It may lead to theories or hypotheses to be experimentally tested. Correlation is defined as a measure of degree of relationships between the variables studies. (Notter, 1974, p. 140)

A list of required documented items was used in a check list format to collect data and a set of John Peter Smith Hospital's audit criteria was used for the actual inservice program. A pretest, posttest design was used to collect the data.

The independent variable for this study was an inservice program. The dependent variable was documentation performance.

The dependent variable is the presumed cause, antecedent for or influence on the dependent

variable. The dependent variable is the presumed consequence or effect of the independent variable. (Polit & Hungler, 1978, p. 56)

Setting

The Medical Intensive Care Unit at a tax supported hospital was used for this study. This county hospital has a 400-bed capacity and is located in a large city in the Southwest. There are three intensive care units in this hospital--a neonatal, a medical, and a surgical unit.

The number of admissions to the Medical Intensive Care Unit averages 300 per month. The average number of admissions of patients with the diagnosis of myocardial infarction is approximately 30 per month. The average daily staffing consists of five nurses per shift. They are of varying educational preparation: 15 baccalaureate prepared, 2 diploma prepared, 1 associate degree graduate, and 2 licensed vocational nurses. The average length of time these nurses have worked in the unit is 5 years.

When a client is discharged from the hospital, the chart is sent to the medical records department. The medical records department is located in the basement of the main hospital building. The department has several

specialty sections. Coding and indexing, dictating and transcription, and quality assessment are among these departments.

Data retrieval is normally done in the quality assessment section of the department by the quality assessment coordinators. This area has two large tables and several cushioned arm chairs. The tables are used to hold the charts being reviewed. The area is well lighted and in a quiet area of the department. The supervisor for this area is a registered record analyst. The auditing of the patient charts before and after the inservice program took place in the central medical records department as do all other chart audits performed at this hospital.

Population and Sample

The data source included the nurses' notes on patients in the Medical Intensive Care Unit with the diagnosis of myocardial infarction. Only those records of patients who, according to the physician's notes, experienced chest pain and arrhythmias were used in this study. The nurses' notes were randomly selected from the records which met the criteria for selection. Random selection involves obtaining a sample from a

"population in such a fashion as to insure that every object, event, or individual in the population has equal chance of being drawn for the sample" (Roscoe, 1969, p. 134).

The nurses' notes reviewed included those kept prior to and after attendance in the inservice program. The nurses' notes reviewed consisted of those containing recordings performed by five of the nurses who participated in the inservice program. A total of five nurses was selected to keep the sample size manageable. Eight hour shifts of notation by each nurse were reviewed, both pretreatment and posttreatment, for a combined total of 400 hours of nurses' notes. Of the available notations made by nurses selected to participate in the study, each 8-hour shift of notes was assigned a number that coincided with the number assigned to the nurse making the notation. These numbers were placed on a random table and random selection of records to be reviewed were made until five were selected for each nurse's number.

Protection of Human Subjects

The proposed study was submitted to the Texas Woman's University Human Research Review Committee for permission to conduct the study (Appendix A). The administrator of

John Peter Smith Hospital signed a form granting permission for use of the facilities and medical records (Appendix B).

Anonymity and confidentiality of the records was maintained by preventing any identifying patient information to be used. Data were obtained from the medical records and the records were then returned to the central files. Chart audits and inservice programs are routinely performed at this hospital. Inservice programs are held for the nursing staff at John Peter Smith Hospital on a weekly basis.

Instruments

The instruments used in this study were the hospital's audit criteria for the myocardial infarction patient (Appendix C) and a data collection worksheet (Appendix D) developed for this study. The audit criteria were developed by the health care team of the hospital and is based on the guidelines and standards set forth by the Joint Commission on Accreditation of Hospitals (1979). The standards require nursing care to be planned and implemented in a safe and effective manner (Moore, 1972). Verbal permission to use the audit criteria was given at the time agency permission was obtained.

The audit criteria are specific regarding required documentation behaviors. A numerical value of 1 point is assigned to each criterion. Content validity for the audit criteria, while not formally established, were found since the criteria are developed based on guidelines for standards as set by the Joint Commission on Accreditation of Hospitals (1979). Also, due to the usage of the audit criteria for several years by the participating hospital, some degree of reliability has been established. Eight of the criteria statements were used in this study.

The criteria relating to chest pain were:

1. Nurses' notes will document the occurrence of or lack of occurrence of chest pain every 8 hours.
2. Nurses' notes will contain a detailed description of pain including quality, severity, location of, and patterns of pain at the time that chest pain occurs.
3. Nurses' notes will contain notation of medications administered for chest pain by name, dosage, and route of administration at the time that the medication is administered.
4. Nurses' notes will contain a description of resolution of pain or failure to resolve within 1 hours of administration of medication.

The criteria related to arrhythmias were:

1. Nurses' notes will contain documentation of cardiac activity in the form of a rhythm strip recorded every 8 hours.
2. Nurses' notes will document arrhythmias in the form of a rhythm strip with accompanying notation at such time as arrhythmia occurs.
3. Nurses' notes will document client's response to the development of the arrhythmia within 15 minutes of onset of the arrhythmia. The responses should include vital signs and mental status.
4. Nurses' notes will contain notation of antiarrhythmic agents administered by name, dosage, and route of administration at the time it is administered.

An observation recording worksheet was developed by the investigator. This worksheet was designed to determine the presence or absence of data in the patient record relating the two groups of criteria identified for audit.

Data Collection

The nurses' notations selected for participation in this study were randomly selected. The selection was

made from the nurse roster for this unit and each nurse's name was assigned a number.

These nurse notations were used in this study. Those records meeting the criteria for audit were randomly selected from the population of nurses' notations under study. Those nurses' notes were reviewed to compare the documented nursing practice with the pre-established standards for practice. The data collected consisted of pretreatment and posttreatment data. Five 8-hour shifts of nurses' notes were selected for the study and were retrieved from the central records file. These notes were reviewed to compare the actual documentations to the audit criteria. This established a pretreatment comparison basis.

An inservice program on required documentary behaviors was given to the total nurse population in the Medical Intensive Care Unit over a 5-day period. These nurses were given an oral presentation and written copy of the audit criteria. Two weeks subsequent to this presentation five 8-hour shifts of nurses' notes kept by each nurse selected for the study were retrieved from the central records file and reviewed to compare the actual documentation to the audit criteria. This allowed

enough time for the records to get to the medical records department after the patient's discharge from the hospital, thus providing posttreatment data.

Treatment of Data

The statistical evaluation includes a description of the pretreatment and posttreatment mean scores and pretreatment and posttreatment percentages of notations made in the patient's record. The paired t-test provided a statistical basis for differences between pretreatment and posttreatment data.

The t-test is a basic parametric procedure for testing differences in two groups on a dependent variable. The paired t-test is used to obtain two measures from the same group or paired sets of groups. (Polit & Hungler, 1978, p. 550)

The objective of the data analysis was to analyze the difference in performance scores. The data analysis was run in the Texas Woman's University Computing Center. A .05 level of significance was used to reject or accept the null hypothesis.

CHAPTER 4

ANALYSIS OF DATA

This study was conducted to describe the differences in documentation performance between an inservice program and nurses' documentation behaviors. This chapter presents an analysis of the data collected.

Description of Sample

Four hundred hours of nurses' notes were reviewed to compare actual documentations to the required standards for adequate documentations on patients with the diagnosis of myocardial infarction. The required standards were contained in the hospital's audit criteria for this disease process. One group of criteria related to documentations on chest pain and one group related to documentations on arrhythmias.

Criteria I related to chest pain as follows:

1. Nurses' notes will document the occurrence of or lack of occurrence of chest pain every 8 hours.
2. Nurses' notes will contain a detailed description of pain including quality, severity, location of, and patterns of pain at the time that chest pain occurs.

3. Nurses' notes will contain notation of medications administered for chest pain by name, dosage, and route of administration at the time that the medication is administered.

4. Nurses' notes will contain a description of resolution of pain or failure to resolve within 1 hour of administration of medicine.

Criteria II related to arrhythmias were as follows:

1. Nurses' notes will contain documentation of cardiac activity in the form of a rhythm strip recorded every 8 hours.

2. Nurses' notes will document arrhythmias in the form of a rhythm strip with accompanying notation at such time as arrhythmia occurs.

3. Nurses' notes will document clients' response to the development of the arrhythmia within 15 minutes of onset of the arrhythmia. The response notations should include vital signs and mental status.

4. Nurses' notes will contain notation of anti-arrhythmic agents administered by name, dosage, and route of administration at the time it is administered.

Findings

Two hundred hours of records were reviewed before and following an inservice program on required documentation performance. The notes reviewed were those of participants of an inservice program on required documentation behavior on the myocardial infarction patient. Five of the 20 participants' notations were randomly selected for review from the full-time nurse roster.

The following hypothesis was tested and rejected:

There will be no difference in the quality of charted documentation of data pertaining to pain and arrhythmias experienced by myocardial infarction patients before and after personnel have attended an inservice program based on Bruner's instructional concepts.

Table 1 presents the pretreatment and posttreatment scores for Criteria I with a mean sum variance of 1.24. This criteria involved the quality of documentations of chest pain.

Table 2 indicates the mean sum variance for Criteria II of pretreatment and posttreatment scores of 1.10. This criteria involved the quality of documentations related to arrhythmias.

Table 1
Pretreatment and Posttreatment Mean
Audit Scores for Criteria I

Nurse Recorder Number	Pretreatment Score	Posttreatment Score
I	2.25	3.50
II	1.80	3.50
III	2.50	3.25
IV	2.00	3.50
V	1.50	3.00
Mean Sum	2.01	3.25

Mean sum variance = 1.24.

n = 5.

Table 2

Pretreatment and Posttreatment Mean
Audit Scores for Criteria II

Nurse Recorder Number	Pretreatment Score	Posttreatment Score
I	2.00	3.50
II	1.75	3.75
III	1.75	2.50
IV	2.50	3.75
V	2.25	2.25
Mean Sum	2.05	3.15

Mean sum variance = 1.10.

n = 5.

In Table 3 the percentages of Criteria I and Criteria II items are shown. As indicated, the patient records went from 42% pretreatment to 67% posttreatment for Criteria I and from 41% pretreatment to 63% posttreatment for Criteria II.

Table 3
Percentage of Items Recorded in
Relation to Audit Criteria

Criteria	I	II
Pretreatment	42%	41%
Posttreatment	67%	63%

n = 5.

Summary of Findings

The calculated values for differences in documentation scores were found to be significantly different following the inservice program. Paired t-test revealed p = .001 for Criteria I and p = .032 for Criteria II. The records showed an average improved difference in pretreatment and posttreatment scores of 1.34 points for Criteria I and 1.100 points for Criteria II. A significant finding of this study was that there was an

overall increase in the mean scores and percentage values of nurses' documentation performances following the in-service program.

CHAPTER 5

SUMMARY OF THE STUDY

The following chapter presents a summary of the entire study, the effects of an inservice program based on Bruner's (1966) instructional concepts, and the quality of nurses' documentation behaviors for charting patient data pertaining to pain and arrhythmias on the myocardial infarction patient. Also presented are conclusions drawn from the study, implications, and recommendations for further study in the fields of inservice education and documentation behaviors.

Summary

This was a descriptive correlation study of a pretest and posttest measurement of scores. The problem of this study was to determine whether or not there was a difference in the quality of documentations of data pertaining to pain and arrhythmias experienced by myocardial infarction patients before and after personnel have attended an inservice program based on Bruner's instructional concepts. The following null hypothesis was tested and rejected: There will be no significant difference in the quality of documentation of data

pertaining to pain and arrhythmias experienced by myocardial infarction patients before and after personnel have attended an inservice program based on Bruner's instructional concepts.

This study was conducted utilizing patient records from the Medical Intensive Care Unit at a tax supported hospital in a large city located in the Southwest. Data retrieval was performed in the medical records department of this hospital.

The instruments used in this study were the hospital's audit criteria for the myocardial infarction patient and a data collection worksheet developed by the investigator for this study. The audit criteria were developed by members of the hospital's health care team and is based on the guidelines and standards as set forth by the Joint Commission on Accreditation of Hospitals (1979).

Bruner's (1966) theory of instruction was the basis for development of the inservice program. The inservice program was presented to all of the full-time nurses in the Medical Intensive Care Unit by the inservice coordinator for the unit. The topic chosen for the inservice program was audit criteria standards for the myocardial

infarction patient as this was the most frequent diagnosis of patients admitted to this unit.

Data were retrieved and tabulated before and following the inservice program. The documentation scores obtained before the inservice were compared with the documentation scores following the inservice program. The finding was that there was an overall increase in the mean scores and percentage values of nurses' documentation performance following the inservice program. Therefore, the null hypothesis was rejected.

Discussion of Findings

This study compared differences in the content of nurses' notes before and following an inservice program designed to increase the quality of documentation performance. The findings of this study are supported by several previous studies of inadequate documentation behaviors (Jackson et al., 1978; Kerr, 1975; Steckel, 1976; Walker & Selmanoff, 1964), the results of inadequate documentation performance (Creighton, 1980; Hershey & Lawrence, 1976; Kerr, 1975), and the effects of inservice programs on behaviors (del Bueno, 1977; Forni & Averman, 1974; Trussel & Crow, 1977).

Conclusions and Implications

As a result of this study, the following conclusions can be drawn:

1. An inservice program can be effective if developed with a specific target group in mind. The program can be designed to motivate toward desired results.

2. Bruner's (1966) theory of instruction can provide guidelines for a successful inservice program.

As a result of this study, the following conclusions can be drawn:

1. Inservice education could promote desired behaviors in assisting nurses to meet the expectations of the public for quality health care.

2. The development of inservice programs could incorporate the four features of Bruner's (1966) theory of instruction to increase participants' interest.

Recommendations for Further Study

Based on the findings of this study, the following recommendations are made:

1. More data are needed regarding the effectiveness of inservice education programs as they relate to the

behavioral and attitudinal changes required by nursing practice.

2. A study to determine what priority charting as given by nurses would provide data necessary to develop inservice programs.

3. This study should be repeated in 6 months to determine what extent of retention of the desired effects of the inservice program exist.

APPENDIX A

TEXAS WOMAN'S UNIVERSITY
Box 23717, TWU Station
Denton, Texas 76204

1810 Inwood Road
Dallas Inwood Campus

HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Lillie Mae Biggins Center: Dallas
Address: 4009 Burke Road Date: 12/11/80
Fort Worth, Texas 76119

Dear Ms. Biggins:

Your study entitled The Effects of an Inservice Program on Nurses

Documentation Behavior

has been reviewed by a committee of the Human Subjects Review Committee and it appears to meet our requirements in regard to protection of the individual's rights.

Please be reminded that both the University and the Department of Health, Education, and Welfare regulations typically require that signatures indicating informed consent be obtained from all human subjects in your studies. These are to be filed with the Human Subjects Review Committee. Any exception to this requirement is noted below. Furthermore, according to DHEW regulations, another review by the Committee is required if your project changes.

Any special provisions pertaining to your study are noted below:

Add to informed consent form: No medical service or compensation is provided to subjects by the University as a result of injury from participation in research.

Add to informed consent form: I UNDERSTAND THAT THE RETURN OF MY QUESTIONNAIRE CONSTITUTES MY INFORMED CONSENT TO ACT AS A SUBJECT IN THIS RESEARCH.

The filing of signatures of subjects with the Human Subjects Review Committee is not required.

 Other:

 X No special provisions apply.

Sincerely,

Estelle D. Kuntz
Chairman, Human Subjects
Review Committee

at Dallas

PK/smu/3/7/80

APPENDIX B

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE John Peter Smith Hospital

GRANTS TO Lillie M. Biggins
a student enrolled in a program of nursing leading to a
Master's Degree at Texas Woman's University, the privilege
of its facilities in order to study the following problem.

Does an inservice program regarding effective document-
ation influence nurses' documentation performance on
the myocardial infarction patients in the intensive
care unit?

The conditions mutually agreed upon are as follows:

1. The agency (may) (~~may not~~) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (~~may~~) (may not) be identified in the final report.
3. The agency (wants) (~~does not want~~) a conference with the student when the report is completed.
4. The agency is (willing) (~~unwilling~~) to allow the completed report to be circulated through interlibrary loan.
5. Other _____

Date: 11/3/80

Lillie Biggins
Signature of Student

Signature of Agency Personnel

Jane Dawson (Ch.)
Signature of Faculty Advisor

*Fill out & sign three copies to be distributed as follows:
Original - Student; First copy - Agency; Second copy - TWU
College of Nursing.

APPENDIX C

Audit Criteria for Myocardial Infarction Patient

USUAL PROBLEM

CRITERIA STATEMENT

I. Potential Chest Pain

1. N.N. will document the occurrence of or lack of occurrence of chest pain $\bar{q}$ 8⁰.
2. N.N. will contain a detailed description of pain including quality, severity, location of, and patterns of pain at the times that chest pain occurs.
3. N.N. will contain notation of medications administered for chest pain by name, dosage, and route of administration at the time that the medication is administered. The graphic sheet will also contain notation of medications administered for chest pain by name, time and route of administration.
4. N.N. will contain a description of resolution of pain or failure to resolve within 1⁰ of administration of medicine.
5. N.N. will contain notation of notification of physician within 1⁰ of onset of pain.

II. Potential Increase in cardiac work

1. N.N. will contain detailed descriptions of behaviors suggesting an anxiety state within 8⁰ of arrival to unit and $\bar{q}$ 8⁰ thereafter.
2. N.N. will contain documentation of client instruction concerning procedures and treatments prior to initiation of same.
3. N.N. will contain a notation concerning whether or not the client seems to understand explanations given. This notation will appear at such time as explanation is given.
4. N.N. will contain notations of client stated anxieties when and if such statements are made.
5. N.N. will describe anxiety behaviors which seem harmful to the clients physiological being $\bar{q}$ 8⁰ should such behaviors be observed.
6. N.N. will contain notation of PRN sedation administered by medications name, dosage, time, and reason for administration. Graphic sheet will contain notation of same medication by name, time and route of administration.
7. N.N. will contain description of relief of anxiety or failure to relieve anxiety within 2⁰ of administration of sedation.
8. N.N. will document notification of physician concerning persistent high level anxiety within 2⁰ of initiation of attempts to alleviate anxiety.
9. N.N. will document explanations given the client concerning limitations to physical activity within 8⁰ of arrival to the unit.
10. N.N. will describe clients response to explanations concerning decreased physical activity as demonstrated by his level of physical activity.

Audit Criteria for Myocardial Infarction Patient (continued)

<u>USUAL PROBLEM</u>	<u>CRITERIA STATEMENT</u>
III. Potential Cardiac Arrhythmias	1. N.N. will contain documentation of cardiac activity in form of a rhythm strip recorded q 8⁰. 2. N.N. will document arrhythmias in the form of a rhythm strip with accompanying notation at such time as arrhythmia occurs. 3. N.N. will document in detail the client's response to the development of an arrhythmia within 15 minutes of onset of the arrhythmia. Above description of response to arrhythmia should include vital signs, mental status as compared to previous mental function and subjective description of client. N.N. will document any obvious factors contributing to the development of the arrhythmia at this time. 4. N.N. will contain notation of antiarrhythmic agents employed by medication name, dosage, and route of administration at the time it is administered. Above medication will be documented on the graphic sheet also. Should no treatment be employed, N.N. will document same. 5. N.N. will document notification of physician within 30 minutes of onset of arrhythmia. 6. N.N. will document client's physiological and mental responses to antiarrhythmic procedures initiated within one hour of initiation of procedures. Above documentation will include vital signs, rhythm strip and subjective evaluation of client including all abnormal findings.
IV. Potential Complications	1. Graphic sheet will contain record of B/P, HR, RR, temp q 4⁰. 2. Intensive Care observation sheet will contain documentation of vital signs taken more frequently than q 4⁰. 3. Weight will be noted on the graphic sheet on the day of arrival to the unit. 4. 24⁰ Intake and output record will contain record of urine output q 4⁰. 5. Intensive Care observation sheet will contain record of urine output measured more frequently than q 8⁰. 6. N.N. will describe in detail the development of untoward symptoms q 8⁰ and at such time as they occur. Description will include relevant subjective and objective findings. 7. N.N. will contain notation of notification of physician within 1⁰ of onset of untoward symptom.

APPENDIX D

Data Collection Worksheet

					Chart#	
					Nurse#	
					Name	Medication
					Dose	Administrations
					Route	
					Yes	
					No	Effectiveness of Drug
						Chest Pain
					Absent Yes No	
					Quality	
					Location	
					Severity	
					Pattern	
					Yes	
					No	Physician notified
					Yes	
						EKG Strip present
					No	
					Yes	Arrhythmias noted
					No	
					Yes	Arrhythmias strip present
					No	
				Yes	Physical appearance	
				No		
				Yes	V.S.	Findings noted at time of arrhythmias
				No		
				Yes	Alteration of mental status	
				No		
				Yes	Medicine dosage route	Anti-Arrhythmias admission
				No		
				Yes		Physician notified of Arrhythmias
				No		

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