RELATIONSHIP OF A STRUCTURED INFORMATION TRANSFER PROCESS FOR FAMILY MEMBERS OF PATIENTS TRANSFERRED FROM SICU TO AN IN-PATIENT UNIT ON TRANSFER ANXIETY

BY

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FACULTY OF GRADUATE STUDIES

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ABSTRACT

This experimental research study included 80 family members of patients transferred from Surgical Intensive Care Unit (SICU) to an in-patient unit. The purpose of the study is to compare the relationship of structured transfer information for family members with usual unstructured information on transfer anxiety.

Transfer anxiety is a phenomenon common to many practice settings known in the nursing literature as relocation stress syndrome. Transfer anxiety was measured using a Graphical Anxiety Rating Scale (GARS) and Perception of Transfer as a Stressor Scale (PTSS). Means were compared between experimental and control groups and step-down unit (SDU) vs. wards. Demographic information and open-ended questions were included in the study and analyzed using a modified thematic content analysis. Descriptive statistics and independent *t*-tests were used to analyze the data. Pearson correlation calculations were conducted to determine potential relationships between variables.

Family member anxiety in the experimental group was greater when the patient was transferred to a SDU as compared to a ward for all GARS measures (baseline, time of transfer and current time). Location influenced happiness about the transfer, readiness for the transfer and the combined grouping of happiness, readiness and nervousness about the transfer from SICU. There was no correlation between number of hours in SICU and family member anxiety or transfer anxiety.

Family members identify a need for information about the level of care on the receiving unit, readiness for transfer, expectations of the family, visiting restrictions, nutrition, mobility, level of observation, next steps, environment, supports available and physician communication.

The majority of family members view the SICU transfer as a positive event. Those that were ambivalent or negative may exhibit transfer anxiety and could benefit from early identification and intervention to focus the transfer as a positive event. The family members identified areas for improvement within the hospital including communication and the physical environment.

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LIST OF ABBREVIATIONS

CCU	Coronary Care Unit
GARS	Graphical Anxiety Rating Scale
ICU	Intensive Care Unit
MICU	Medical Intnesive Care Unit
NICU	Neonatal Intensive Care Unit
PTSS	Perception of Transfer as a Stressor Scale
RN	Registered Nurse
SAPS II	Simplified Acute Physiology Score II
SDU	Step-Down Unit
SICU	Surgical Intensive Care Unit
TISS	Therapeutic Intervention Scoring System

Chapter 1: Statement of the Problem

Introduction

Anxiety in patients and families after discharge from one level of care to another has been noted by many health care professionals. Intra-unit transfers, inter-unit transfers and inter-facility transfers are frequently associated with uncertainty and subsequent anxiety. The transfer may signal the need for increased levels of care such as with a transfer from an in-patient unit to an intensive care unit (ICU) or from home to an Emergency department as well as decreased levels of care as with a transfer from the ICU to an in-patient unit. Transfer may also signal a significant loss in independence as with the transfer from home to a long term care facility. Whatever the cause of the transfer, anxiety appears to be present for both the patient and the family members.

The transfer may be perceived as a stressor by many individuals and as such may be a psychologically traumatic experience. The specific reason for anxiety after transfer from an ICU is not clear but may be related to uncertainty after transfer, lack of preparatory information prior to the transfer or the sudden removal of monitoring devices, constant observation or change in personnel between the ICU and in-patient unit.

Nursing literature refers to anxiety after transfer from the ICU as transfer anxiety or transfer stress. The related nursing diagnosis known as relocation stress syndrome was formally approved by the North American Nursing Diagnostic Association (NANDA) in 1992

(Manion and Rantz, 1995). Relocation stress syndrome is defined as physiologic and/or psycho social disturbances as a result of transfer from one environment to another (North American Nursing Diagnosis Association NANDA, 1992 cited in Manion and Rantz). The major defining characteristics of relocation stress syndrome include change in environment or location, anxiety, apprehension, increased confusion in the elderly population, depression and loneliness (Manion and Rantz, 1995, p. 108-9). Other terms used to identify relocation stress include: post-relocation crisis, relocation crisis, relocation shock, relocation syndrome, relocation trauma, transfer anxiety, transfer stress, transfer trauma, translocation syndrome, transplantation shock and separation anxiety (Leith, 1998).

For the purposes of this research study, transfer anxiety will be explored as it relates to transfer from a tertiary level surgical intensive care unit (SICU) to a step-down unit (SDU) or general in-patient unit (ward) environment.

Statement of the Problem

Any patient who is transferred from the SICU to an in-patient unit has the potential to encounter anxiety or stress after the transfer or conversely interpret the transfer as reassuring. The environment of a tertiary level hospital is very busy and the patient is likely to meet many staff and physicians during their hospital stay. The purpose of a tertiary ICU is to provide a high level of critical care services to a patient population. The occupancy of the ICU is very high and necessitates immediate transfer once the critical care service needs of the patient are

no longer required. The shift in level of care is often immediate with little or no preparation for the patient or family. The staff and physicians providing care varies from the ICU to the in-patient unit. Routines and goals for the patient are frequently different. The patient and family is often left to adjust to rapid changes in care delivery with minimal advance notice and this may lead to increased anxiety levels.

Anxiety after transfer from the ICU could be associated with fright, worries about quality of care, fear of neglect, or even fear of the future. The patient could be physiologically and psychologically compromised as they are in the recovery mode of a very acute event. The patient may be feeling very vulnerable and the family may feel helpless and concerned that the patient has been rushed out of the ICU.

Purpose of the Study

Information about transfer anxiety in patients and family members after patient transfer from SICU may improve the ability of nurses and other health care providers to understand and adjust their health care practices and facilitate early family member involvement in the patient's transfer and subsequent care plan.

Leith (1998) conducted a descriptive study in two tertiary level medical ICUs after discharge to a general medicine unit. Extension of this study will include application to a tertiary level surgical/trauma ICU population using an experimental two group pretest and post-test design measuring transfer anxiety in a group that receives the usual level of

information related to SICU transfer and a second group that receives structured teaching regarding SICU transfer. The study will also compare levels of transfer anxiety in the family members of patients transferred from the SICU to the in-patient unit compared with a SDU as well as the level of transfer anxiety related to SICU patient length of stay. Quantitative methods are used to evaluate the measures obtained within this study.

The Research Questions

This study will focus on the following questions:

1. What is the level of anxiety that family members experience after patient transfer from a surgical ICU?
2. What is the difference in transfer anxiety that family members experience after patient transfer from surgical ICU when structured transfer information is provided as compared to usual unstructured transfer information?
3. What is the difference in transfer anxiety that family members experience after patient transfer from surgical ICU when patient transferred to step-down unit as compared to general in-patient unit?
4. What is the correlation between family member transfer anxiety following patient transfer from surgical ICU to in-patient unit and ICU length of stay?
5. What information do family members need related to patient transfer from a surgical ICU?

6. What is the correlation between reported amount of information received prior to surgical ICU transfer and level of anxiety?

Research Hypotheses

1. Family members experience a greater amount of transfer anxiety after patient transfer from a surgical ICU when they receive usual unstructured information regarding the transfer in comparison to family members that receive structured transfer information.
2. Family members experience a greater amount of transfer anxiety after patient transfer from a surgical ICU when the patient is transferred to general in-patient unit as compared to step-down unit.
3. Family members experience a level of transfer anxiety proportionate to the patients' surgical ICU length of stay.
4. There is a negative correlation of anxiety among family members after patient transfer from a surgical ICU and amount of information provided prior to ICU transfer.

Assumptions/Limitations of the Study

This study assumes that transfer from SICU may lead to crisis in a family adapting to the distressing event of ICU admission and subsequent discharge. Crisis is exhibited through anxious behaviors and may or may not be affected by the amount of information the family members receive in preparation for patient transfer from the surgical ICU to an in-patient unit.

A limiting factor in this study are the many extraneous variables that could produce anxiety in the family members and contribute to the anxiety or uncertainty. An additional limiting factor is the coping strategies employed by the family members and the strength of their personal support systems.

Significance of the Study

Patients have been documented to experience anxiety after transfer from coronary care units. This anxiety has occasionally contributed to physiologic sequelae such as dysrythmias and extension of initial myocardial infarct secondary to release of catecholamines (Toth, 1980). There are few studies that measure the effect of the transfer from a medical or surgical ICU to an in-patient unit. A recent study by Leith (1998) identified that the majority of patients and family members experienced moderate to severe levels of anxiety after transfer from a medical ICU.

There are no published studies that measure the transfer anxiety for the family member of a patient surrounding transfer from a surgical ICU to a SDU or a surgical in-patient unit. Nor have studies been conducted measuring the amount of anxiety experienced by family members comparing structured information process versus usual unstructured information at patient transfer from an ICU setting. Toth (1990) used a quasi-experimental design comparing the effect of teaching methods on patient anxiety after leaving a CCU while Schwartz and Brenner (1979) conducted a randomized experimental design to compare the effect of two

selected nursing interventions on reducing patient stress associated with CCU transfer.

One method of reducing transfer anxiety is to provide structured information in advance of the transfer enabling the patient and family members to reduce their uncertainty and thereby reduce their anxiety. This study will provide valuable information to ICU nurses and in-patient unit nurses regarding the phenomenon of transfer anxiety and identify the value of pre-transfer information in reducing that anxiety. This study evaluates the outcome of a nursing intervention on the family members and will contribute to nursing knowledge and provide guidance for nursing practice to benefit future patients and family members experiencing ICU transfer.

Definition of Terms

transfer anxiety

a state in which an individual experiences physiologic and/or psychological disturbances as a result of transfer from one environment to another (Carpenito, 1995, as cited in Leith, 1988).

family members

adults (18 years of age or older) who are related to the patient by blood, marriage, adoption, or friends and neighbors who are identified as a "significant other" that visit the patient during the surgical ICU patient stay

surgical ICU

the area of the hospital that provides highly technical, specialized care to patients with critical, life-threatening surgical problems and allows for continuous monitoring and registered nurse observation

general in-patient unit

the area of the hospital more commonly known as the hospital ward that does not provide for continuous monitoring observation by the registered nurse

step-down unit

the area of the in-patient unit or hospital ward that may provide continuous monitoring and registered nurse observation

Conceptual Framework

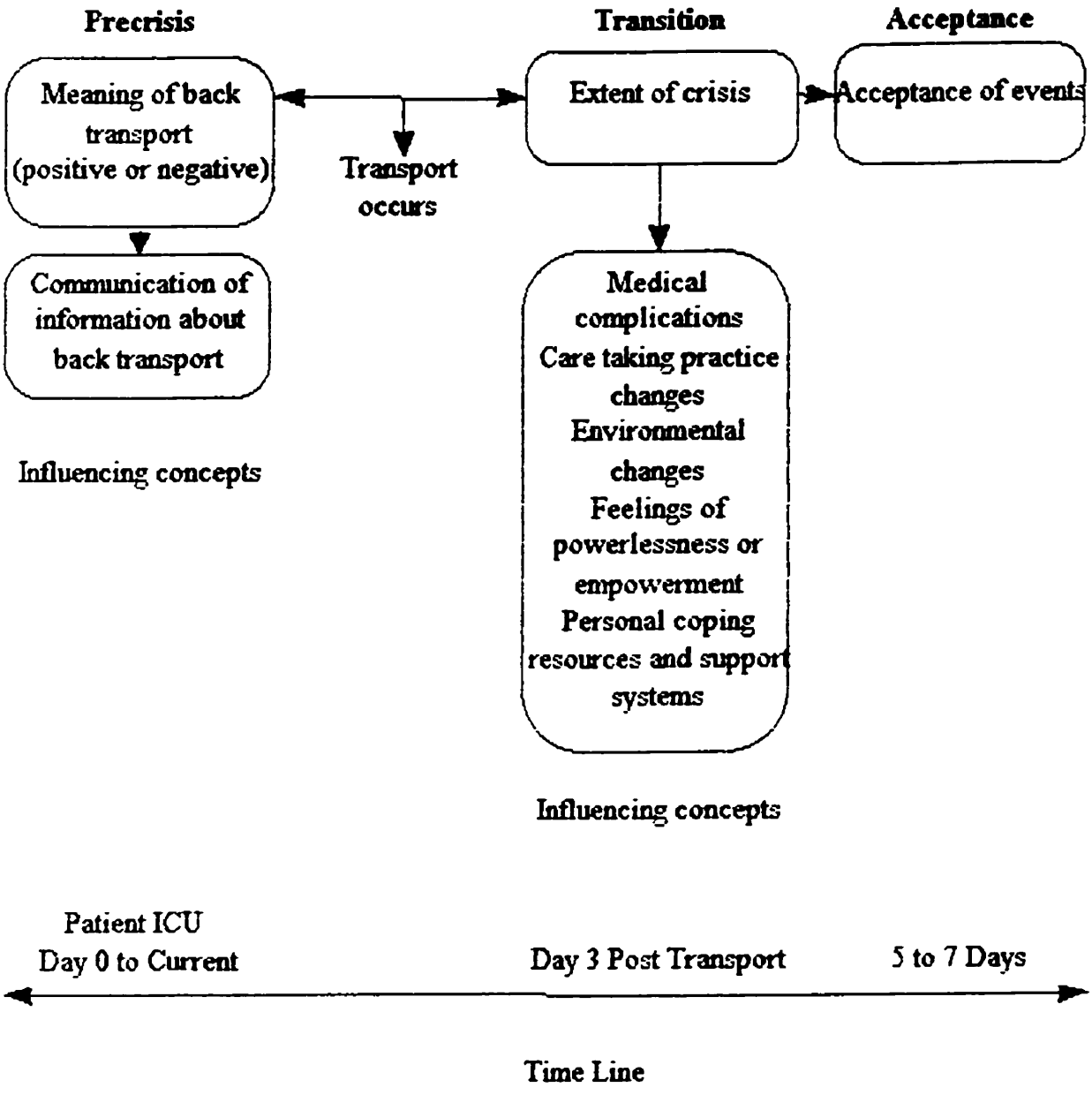
The phenomenon of transfer anxiety in family members of patients transferred from an ICU is not unique to the adult population. The transfer of the preterm infant from a tertiary neonatal intensive care unit (NICU) to community hospital has been termed "back transport" or "retransfer". Back transport has been explored in a qualitative study by Kuhnly and Freston (1993) and resulted in the development of a conceptual model entitled Model of Back Transport Experience. This model was derived using content analysis of interview transcripts with parents following infant back transport. Theoretical saturation occurred after ten interviews with parents. A further four interviews were conducted to verify data saturation. The three phases of the parents' experience are identified as Precrisis, Transition and Acceptance.

A Precrisis period is influenced positively or negatively by the communication of information to parents about the back transport and by previous events of the hospitalization. Following back transport, a three day transition period occurred during which the extent of the crisis is realized. Influencing concepts at this stage include medical complications, care taking practice changes, environmental changes, feelings of powerlessness or empowerment, and personal coping resources and support systems. The transition period lasted approximately three days for all parents and led to the period of acceptance by days five to seven after back transport. The experience of back transport was a crisis-provoking situation superimposed on

parents already in disequilibrium from a preterm infant (Kuhnly et al, 1993, p. 54).

This crisis experienced with back transport is not unlike the feelings family members may experience when the patient is transferred from the high technology, high monitoring environment of a tertiary ICU to an in-patient unit that provides a different level of patient care through reduced observation and monitoring and increased patient to nurse ratios. The principle hypothesis of this research study is that nursing intervention at the Precrisis stage through provision of transfer information to family members prior to patient transfer from the surgical ICU will positively influence the transfer event and reduce the extent of the crisis at the Transition stage enabling the family to move to Acceptance of events leading to ICU care and discharge. This hypothesis follows The Model of Back Transport Experience as depicted in Figure 1 (p.11) (Kuhnly et al, 1993, p. 51).

Figure 1. Model of Back Transport Experience



Chapter Summary

This chapter has provided an overview of the concept under investigation, transfer anxiety, and identified the problem associated with transfer anxiety in the clinical setting. A statement of purpose and several research questions have been identified. The conceptual framework adapted from the Model of Back Transport has been described and its relevance to transfer anxiety introduced. In the next chapter the literature review will be presented including transfer anxiety as it relates to the family members.

Chapter 2: Literature Review

Introduction

A literature search was conducted using Medline and CINAHL databases and the terms ICU Discharge, ICU Transfer, Transfer Anxiety, Relocation Anxiety, Relocation Stress Syndrome, Transfer Stress, Translocation Syndrome, Transfer Shock, Relocation Trauma, Translocation Trauma, Translocation Shock, and Anxiety to review the current relevant literature. The articles pertaining to transfer from an Intensive Care Unit setting or Coronary Care Unit to an in-patient unit or general ward describing or researching the phenomenon related to the anxiety experienced at time of transfer were reviewed.

In order to comprehend ICU transfer anxiety, an understanding of anxiety, transfer anxiety, transfer anxiety as it relates to patients and families, measurements of transfer anxiety and nursing interventions for transfer anxiety is required.

Anxiety

Anxiety is a concept frequently encountered in nursing in all practice areas. The earliest discussions of anxiety are credited to Kierkegaard (1844) an existential philosopher who described anxiety as a vague, diffuse uneasiness, different from fear in that no apparent danger is present (cited in Goodwin, 1986). The concept of anxiety arose from psychoanalytic theory from the time Freud first wrote about it in 1926 (Robinson, 1990).

Anxiety is a condition characterized by subjective, consciously perceived feelings of

tension and apprehension accompanied by activation of a neural-endocrine autonomic response mediated by the hypothalamus, sympathetic nervous system, and adrenal glands (Clark, et al,1994). Anxiety is a reflection of many underlying causes. It can be a normal response to entering an intensive care unit or in response to the psychological impact of encountering illness, separation from family, loss of control and fear of death. Anxiety can have a physiological manifestation through vital signs, for example, or can represent a psychiatric disorder. The variety of causes of anxiety and manifestations can lead to difficulty in definition.

Whitley, (1992) undertook a concept analysis of anxiety as it is a very broadly applied impression in nursing practice. A recurring theme in the definitions of anxiety is that neither the cause nor the nature of the felt danger is known. The unknown origin of anxiety is a characteristic that separates it from fear. Whitely identified four critical attributes of anxiety: there is a presence of a vague, uneasy feeling of discomfort or dread; the source or cause of the anxiety is unknown or nonspecific; psychological/behavioral causes act as energizers but are not directly observable; the physiologic, psychological/behavioral, or cognitive signs are the objective result of the transformation of the energy into relief behaviors (p. 111). The empirical referents for anxiety are frequently grouped in the nursing literature into the categories of physiologic, psychological/behavioral, and cognitive.

Clark, et al (1994) describe anxiety on a continuum from mild to moderate to severe to

panic. Mild anxiety is not necessarily noticeable. A mild level of anxiety acts as a stimulus for improved problem-solving. As anxiety progresses from mild to moderate, the person experiencing it may begin to feel more uncomfortable. In moderate anxiety, cognitive changes can occur leading to reduced concentration and increased restlessness. The subjective feelings of anxiety intensify as the anxiety escalates. The person may experience a feeling of impending doom. At the panic level, the person may become extremely uncomfortable and increased physiological symptoms may appear (Clark, et al, 1994).

There are many physiological symptoms that may indicate anxiety. In the critically ill person, it is very important to know the medical conditions that may mimic anxiety, for example, congestive heart failure, hypovolemia, dysrhythmia and angina (Clark, et al, 1994). Physiologic responses to stress are mediated through the autonomic nervous system and prepare the person for flight or fight. Activation of the sympathetic nervous system branch results in increased cardiovascular rate and cardiac output. Palpitations or dysrythmias may occur and blood pressure may increase. Blood supply is shunted to the brain, heart and skeletal muscles and away from the periphery. Respiratory rate and depth are increased to optimize oxygenation (Murray, 1975). The physiologic assessment of anxiety in a critically ill patient would be difficult to assess as their illness may result in changes in cardiac output, dysrhythmias, and others. Cognitive function in the critically ill patient may be altered as a result of medications or sensory overload. Measurement of the psychological/behavioral

manifestations of anxiety in the critically ill patient recently transferred from the ICU setting has the highest potential for appropriately identifying anxiety (Leith, 1998).

Johnson and Lauver (1989) studied the effect of preparatory information on patient's anxiety and began studying the underlying processes that enhance coping. Johnson and Lauver examined the premise of four theories to understand how interventions affect the observed coping outcomes. The theories formed the basis of their hypothesis in a study of the effects of preparatory information intervention on coping with radiation therapy for cancer. Emotional drive theory suggests that patients with high anxiety will be highly anxious before and after the threatening event. Preparatory information should help these patients to lower their anxiety and to focus on the information given. A moderate level of anxiety creates an effective level of motivation in preparation for an impending experience. Patients with low levels of anxiety are not motivated to prepare for the stressful experience (Johnson et al, 1989).

Janis (1985 cited in Johnson et al, 1989) suggests information will help to focus highly anxious patients by decreasing their anxiety; it will not affect the moderately anxious patient, and it will motivate patients with low anxiety to engage in the work of worry, causing them to be less anxious post-operatively. Research into the effects of preparatory information on the emotional responses of patients indicated that the information was effective in reducing emotional distress and anxiety (Jenkins and Rogers, 1995).

Transfer Anxiety

Relocation stress syndrome is defined as "a state in which an individual experiences physiologic or psychological disturbances as a result of a transfer from one environment to another (Harkulich & Brugler, 1991 cited in Barnhouse, et al, 1992). Relocation stress syndrome has been described in the movement of patients from one unit to another, one facility to another, movement to a long-term care facility or to a new home (Manion and Rantz,1995).

Transfer anxiety occurs when people are required to move from a familiar environment in which they feel secure, to an unfamiliar environment (Saarmann, 1993). Patients with transfer anxiety experience primary anxiety from the untimely termination of their dependent relationship with their nurse according to Roberts, (1976). The patients experiencing transfer anxiety encounter fright from the implications of their illness as well as from the idea of leaving the security of the critical care unit. Expectant anxiety occurs when patients worry about what the new unit will be like. The basis of transfer anxiety, according to Roberts (1976) is formed from the three conditions of primary anxiety, fright and expectant anxiety. Transfer anxiety can be experienced with transfer from one critical care unit to another and within the critical care unit transfers as well as with transfers to the in-patient unit.

Primary anxiety arises when there is a blockage in the termination or separation process such as when a patient is transferred from a critical care unit to an in-patient unit without an opportunity to transfer gradually (Roberts, 1976). The transfer process may be

abrupt preventing the patient from going through normal termination processes like saying good-bye. The patient's family may not be notified and they could experience anxiety at discovering an empty bed, for example. If the transfer is quickly arranged, the patient may be informed or deduce the bed is required for somebody that is more critically ill, creating a potential for additional anxiety as the patient may still view themselves as critically ill. An abrupt transfer does not allow the patient to identify the positive characteristics of their transfer and they may feel rejected. Timing of a transfer can also create confusion and disorientation for the patient, especially if the transfer is during the night.

A second condition contributing to transfer anxiety is fright. The patient may feel secure in the presence of monitoring equipment and constant observation. Feelings of fright arise when a person does not know what to expect in a particular situation. The provision of information regarding the pending transfer and purpose as well as expectations of the new environment may greatly reduce transfer anxiety (Roberts, 1976).

Expectant anxiety results when the patient has difficulty integrating into the new environment. The patient's expectations and those of the receiving unit may not be the same. Illness threatens the patient's sense of biological and psychological integrity. The patient may still view themselves as critically ill while the staff are encouraging increased physical activity and changes in the routine and method of basic treatments.

Transfer Anxiety in Patients

Hackett, et al, (1968) conducted a study using taped interviews to identify what CCU patients thought of intensive care and specifically their comfort about the transfer from CCU. Of those interviewed, 73% indicated they were reassured by being transferred out of the CCU as it was tangible evidence of improvement. A sense of loss was felt by 18% of patients with transfer and the missed attention and security they had received. Nine percent were frightened following the move and were concerned about the function of their hearts without a monitor (p. 1366). In the Leith study (1999) 50% of patients and 60% of family members interviewed identified the transfer from ICU as a positive step forward in the patient's recovery.

Dellipani, et al. (1976) examined anxiety after a heart attack in two populations using the Cattell 8-Parallel-Form Anxiety Battery developed by Schier and Cattell (1960). The patients' level of anxiety was high immediately after transfer from the CCU and then fell rapidly over the next week, rising again as discharge from hospital became nearer (p. 754). The pattern of anxiety after heart attack was similar for patients admitted to a CCU, hospital ward, or treated at home.

Minckley, et al, (1979) developed a tool to assess the effect of in-hospital transfers on cardiac patients and to measure nursing interventions in the control or improvement of patient responses to transfer. The Myocardial Stress-of-Transfer Inventory (MISTI) is a set of measures composed of grouped variables related to patients' perceptions of external support,

perceived attitudes and behaviors, and physiological responses commonly assessed by nurses in typical hospital settings (p. 4). Through this study it was determined that cardiovascular signs and symptoms are unstable and dysrhythmias are likely to occur in the two-hour period following transfer. The length of time the patient knew about the transfer prior to the actual discharge was marginally correlated with need for reassurance so that the longer the patient knew about the transfer, the less need for reassurance pre-transfer or after transfer (p. 8).

Schwartz and Brenner (1979) conducted an experimental study of CCU transfer using a control group and two different intervention groups. The level of anxiety was measured using a modified State-Trait Anxiety Inventory developed by Spielberger (1970). The experimental groups scored lower than the control group in patient stress as reported by patient, family and nurse; cardiovascular complications within 24 hours of transfer; and cardiovascular complication 24 - 72 hours after transfer. The interventions included provision of information to family members about patient transfer from CCU and pre-transfer in-patient nurse and CCU patient interactions.

Toth, (1980) conducted a quasi-experimental study of the effect of structured preparation of transfer on patient anxiety on leaving the CCU. Patient anxiety was measured using the Institute for Personality and Ability Testing (IPAT) and physiologic measures of systolic blood pressure and heart rate. There were no statistically different findings in measure of psychological anxiety in the group receiving structured pre-transfer teaching and

the group receiving unstructured teaching but there was a significantly lower measure of physiologic variables in the group receiving a structured pre-transfer teaching program (p. 28).

Poe, (1982) conducted an experimental study to determine if a structured pre-transfer teaching program would lower the stress-of-transfer response in post myocardial infarction patients. The Myocardial Infarct Stress-of-Transfer Inventory (MISTI) and State-Trait Anxiety Inventory (STAI) were used to measure the physiologic/behavioral and psychological parameters of stress. The patients receiving the structured pre-transfer teaching intervention had a significantly lower measure of psychological anxiety (STAI) than those patients receiving an unstructured teaching plan. The physiologic/behavioral measure (MISTI) demonstrated no significant difference between the two groups (p. 365).

Moore (1996) conducted a quasi-experimental study to determine the effects of a discharge information intervention on recovery outcomes following coronary artery bypass surgery using the Profile of Mood States (POMS) and the Sickness Impact Profile. They concluded no significant difference on psychological distress and positive effects on physical functioning with the discharge information intervention (p. 181).

The preceding studies demonstrated responses ranging from no significant difference to significantly lower anxiety in patients when a structured teaching plan was incorporated in the ICU transfer.

Transfer Anxiety in Family Members

Several research studies assessing the needs of family members of critically ill patients were conducted 1980 through 1989 (Leske, 1993). The measure that was most frequently used in these studies was the Critical Care Family Needs Inventory (CCFNI) a tool listing 45 needs statements to be rated by family members on four categories ranging from not important to very important. Empirical analysis of accumulated data across many patient populations, settings, geographic locations, and over time identified that there are primary needs (Leske, 1993). The 15 most frequent needs are categorized into three themes including assurance, proximity and information. Within the 15 frequent needs identified is the need to be told about transfer plans, a component of the theme information (Leske, 1993; Quinn, et al, 1996).

Olsen (1970) (as cited in Quinn, et al, 1996) suggests relatives may directly impact the outcome for the patient in critical illness. The importance of providing family members with transfer information and assessing transfer anxiety in the family member is supported by this theory. Studies have been conducted to assess the level of anxiety of families, but few have addressed the concept of transfer anxiety in family members of adult intensive care patients. Fewer still have employed the evaluation of an intervention.

Doerr and Jones (1979) examined the effect of family preparation for visitation on the state of anxiety level of the CCU patient using the State-Trait Anxiety Inventory (STAI) as a

measure. In this study it was determined patients whose family members were prepared for the visitation demonstrated reduced anxiety compared with families unprepared. It is their hypothesis that family members transmit anxiety to patients and a prepared family reduced the anxiety in the patient (p. 315).

Daley, (1984) interviewed family members of ICU patients regarding their need for relief from anxiety. Family members indicated a need to be informed ahead of time regarding transfer plans (p. 231).

Bokinskie (1992) tested the pre-transfer care conference as a method of reducing family anxiety at the time of transfer from the ICU using the State-Trait Anxiety Inventory (STAI). Care conferences significantly reduced the anxiety experienced by family members upon patient transfer from the ICU (p. 131).

Foss and Tenholder (1993) conducted a descriptive study to determine the difference in expectations and needs of ICU families and in-patient unit families. Family members of ICU patients put greater importance on activities such as being informed in advance of the transfer plan than those with relatives on an in-patient unit (p. 382).

Dodds-Azzopardi and Chapman (1995) conducted a retrospective descriptive measure of parents' perception of premature infant transfer among hospitals as a stressor. Seventy-seven percent of the families independently identified stressful incidents surrounding selected aspects of transfer. In particular the lack of communication between the staff of the intensive

care nursery and the staff of the community hospital nursery was stressful (p. 39).

Jamerson et al (1996) conducted a qualitative investigation of the experiences of families with a relative in the ICU. Findings identified behaviors such as hovering, information-seeking, tracking and garnering resources were common themes. The hovering was related to uncertainty and information-seeking was seen as progress from hovering (p. 467).

In the preceding studies, information through care conferencing and advance notice of ICU transfer were seen to reduce family member anxiety at time of patient transfer.

Assessment of Anxiety

Minckley, et al, (1979) developed a research tool entitled Myocardial Infarct Stress-of-Transfer Inventory (MISTI) to evaluate changes in patients' status as a result of transfer from the coronary care unit to a general care ward. The MISTI included objective and subjective criteria measured over two time periods: eight hour period prior to transfer and the eight hour period immediately following transfer. The tool did not involve direct patient participation but rather data obtained from the medical record including demographic data, vital sign measures, questions such as "did the patient express apprehension about the transfer", presence of a nursing care plan, nurses' estimate of patient readiness for transfer. The observational and nurse questionnaire data were collected and averaged for pre-transfer and post-transfer items. It is limited through the assessment by nurses rather than direct patient

questions. It hypothesizes that a patient who exhibits some degree of anxiety on transfer from the coronary care unit may demonstrate physiologic change upon discharge.

Schwartz and Brenner (1979) administered a questionnaire of physiological and psycho social variables of patient stress to the patient, a family member and a staff nurse on the evening of transfer. The questionnaire was developed by the researchers who modified it from a behavior checklist used by nurses to rate patient anxiety as previously applied by Klein, et al (1974). The Schwartz study identified that patients subjected to either family intervention with the CCU nurse or pre-transfer nurse-patient interaction were more likely to comply with physician orders, had fewer readmissions to the CCU and spent fewer hospital days than those in the control group.

Toth, (1980) studied the effect of teaching methods on patient anxiety after leaving the coronary care unit. Half of the study group of 20 received structured teaching by the researcher and both groups received unstructured teaching by the CCU nurse. The effect was measured using the Institute for Personality and Ability Testing (IPAT) Anxiety Scale. The findings through the psychological questionnaire indicate no significant difference in anxiety between the structured and unstructured teaching groups but a significant difference in measure of physiologic parameters (systolic blood pressure and heart rates).

Dunbar (1983) developed a tool entitled Perception of Transfer as Stressor Scale (PTSS) and administered it to clients admitted to the SICU of a large university teaching

hospital prior to transfer from the ICU. Leith (1998) modified this tool and administered it to patients and family members of patients transferred from one of two University affiliated Medical Intensive Care Units within 48 hours of transfer from the MICU. The PTSS includes five questions scored by the participant using a five point Likert-type scale. The PTSS was found to be easily applied and a direct measure of transfer anxiety in patients and family members. An evaluation of the complete PTSS score provided a reliability coefficient of .5308 and when adjusted by removing one item, an increase in the Cronbach's alpha calculation to .7143, an acceptable level of reliability (Leith, 1998).

Vogelsang (1988) conducted a study with a pre-operative ambulatory surgery population using the State Anxiety Inventory (SAI) and the Visual Analogue Scale (VAS) to determine if the VAS was an accurate and sensitive method to subjectively measure the transitory emotional condition of preoperative anxiety. The VAS proved to be a accurate measure of pre-operative anxiety with a correlation of $r = 0.84$ between the SAI and VAS.

Wewers and Lowe (1990) conducted a review of the various forms of visual analogue scales (VAS). The graphical anxiety rating scale (GARS) utilized in the Leith (1998) study is a form of a VAS. This tool is a horizontal line 100 mm in length with unipolar rating of intensity extremes indicated below and at the ends of the line. The extremes of the GARS are "not anxious" and "as anxious as I could be". Leith (1998) did not report an indication of reliability in her study. The Wewers et al (1990) review indicates correlations on test re-test

with a VAS ranging .90 to .95 from one study to .19 to .90 on another.

Validity of the VAS has been determined using assessments of construct validity, discriminant validity and criterion-related validity (Wewers et al, 1990). The VAS provides a convenient, easy and rapidly administered measurement and is useful across many settings and differing phenomena. The VAS has been reported to cause some difficulty for subjects to conceptualize the method, particularly the elderly and should be used with caution in this group.

Elliott (1993) compared the State-Trait Anxiety Inventory (STAI), Hospital Anxiety and Depression Scale (HAD) and a Linear Analogue Anxiety Scale (LAAS) for evaluating anxiety in patients with acute ischemic heart disease. Adequate correlation between the instruments suggests validity in measuring anxiety in the clinical sample. The LAAS was a good direct measure of subjective anxiety that is easier to apply than the SAI or HAD (p. 199).

Nursing Interventions for Transfer Anxiety

Brugler, et al (1993) recommend the following activities to reduce relocation stress following the 1992 relocation of 59 patients and 190 employees in a rehabilitation hospital. Utilize a systematic approach including planning, organization and communication whether the relocation is for one individual or an entire unit. The amount of planning and organization required is directly related to the complexity of the physical move and the needs of the target population. Patients need to have predictability, control and decision-making opportunities

throughout the relocation process to minimize relocation stress syndrome.

Schlemmer, (1989) studied the process of discharge planning in critical care units in Washington in response to 1987 condition of participation in Medicare programs using a questionnaire and an open ended question. This study summarized the benefit of discharge planning in the critical care unit as a means of ensuring continuity of care and by reflecting both the patient's and family needs. It recognizes that the actual hospitalization is often more threatening than the transition from the hospital and a plan needs to be developed to provide for continuity as well as to address the immediate needs of the critical care patient following discharge. The discharge plan proposed is based on the components of the nursing process, assessment, planning, implementation and evaluation.

Leske (1998) supports the need for family members to receive information reflecting the goal of understanding the patient's condition in order to reduce family anxiety. Meeting the need for information lays the foundation for family decision-making and allows a sense of control.

Saarmann, (1993) identifies the dependency that can develop between an ICU patient and the critical care nurse and recommends discussing the relationship and reminiscing about events as a method to assist the patient to let go. Preparation for transfer early in the planning process reduces situational uncertainty and increases personal knowledge thereby reducing the probability of a stress appraisal. Preparation for transfer from the ICU can include assistance

in interpreting events such as fewer blood gas samples, removal of invasive catheters as positive signs and a step closer to graduation from ICU. Equipment such as monitors and machines should be removed from the patient before the time of transfer as these items may represent safety to the patient and family members. Daytime transfers are better tolerated than nighttime because the patient has the ability to become more familiar with his/her environment and to meet new staff members and roommates. Family members are also more likely to visit during the day to assist the patient in their transition. Patients are usually expected to perform more self-care and be more active on transfer and this can be misinterpreted as uncaring, neglect, abandonment by both the patient and the family if not expected. An introduction by the critical care nurse to the new unit staff or three way conferencing with the critical care nurse, receiving nurse and patient/family can help to assure the patient and relatives that pertinent information is shared. Family members should be included in the transfer planning and should receive the same pre-transfer teaching as the patient. Post-transfer visits by the critical care nurse may also be important to the patient's well-being.

A summary of interventions as suggested by the corresponding author(s) to reduce transfer anxiety in patients and families is provided as Appendix A: Nursing Interventions to Reduce Transfer Anxiety in Patients and Family/Significant Others Following Transfer from the Critical Care Unit.

Chapter Summary

Few studies have been conducted that examine the level of transfer anxiety following transfer from an intensive care unit to a medical/surgical in-patient unit. Fewer still have examined the relationship between transfer anxiety and family member preparation for patient transfer from the ICU to the surgical in-patient unit. Many of the studies conducted were related to the coronary care unit population 1980 through 1989.

The dearth of research in this area and potential impact to family members validates the suitability of this study. Preparation for transfer from the ICU to an in-patient unit is a nursing intervention that may significantly reduce the amount of anxiety experienced by family members. This reduction in anxiety may significantly reduce the demands on the in-patient units in supporting the patient and family during the first few days following ICU transfer. In the next chapter the research design for this study will be presented.

Chapter 3: Research Design

Introduction:

Anxiety in family members after transfer from a surgical/trauma ICU was explored using an experimental pretest and post-test design. A measure of transfer anxiety and general anxiety in family members was obtained concurrent with an interview and structured questionnaire using three open-ended questions identifying the patient transfer experience. This study identified the level of anxiety experienced by family members after patient transfer from the surgical ICU to a step-down unit or general in-patient unit. The level of transfer anxiety experienced by family members in the experimental group using a structured information transfer process vs. the control group receiving usual unstructured transfer information was measured. The level of transfer anxiety experienced by family members of patients transferred from the surgical ICU to general in-patient unit was compared with the level of anxiety experienced when patient transferred to a step-down unit. A comparison between surgical ICU patient length of stay and family member general and transfer anxiety was made. The amount of information the family member recalled through self-report was correlated with the level of anxiety measured. The open-ended questions obtained through the family member questionnaire were used to enhance the interpretation of the quantitative data. The Model of Back Transport Experience developed by Kuhnly and Freston (1993) guided the exploration of transfer anxiety within the experimental and control group.

Research Design:

This study utilized a pretest and post-test experimental design and randomly assigned the eighty family member participants into control and experimental groups. The experimental group received the intervention of structured transfer information and the control group received the usual unstructured transfer information. At the time of study enrollment, the family members in both the experimental and control group completed a measurement of the Graphical Anxiety Rating Scale (GARS), (Appendix H) to determine baseline general anxiety prior to patient transfer. Within 48 hours of surgical ICU discharge, the family member was approached by the nurse research assistant to complete an assessment of transfer anxiety and general anxiety through a structured interview and questionnaire including three open-ended questions, completion of the Perception of Transfer as a Stressor Scale (PTSS), (Appendix I) and GARS at time of transfer and current time. The structured transfer information group (experimental)(Appendix K) and the usual unstructured transfer information group (control) (Appendix J) had 40 randomly assigned participants each.

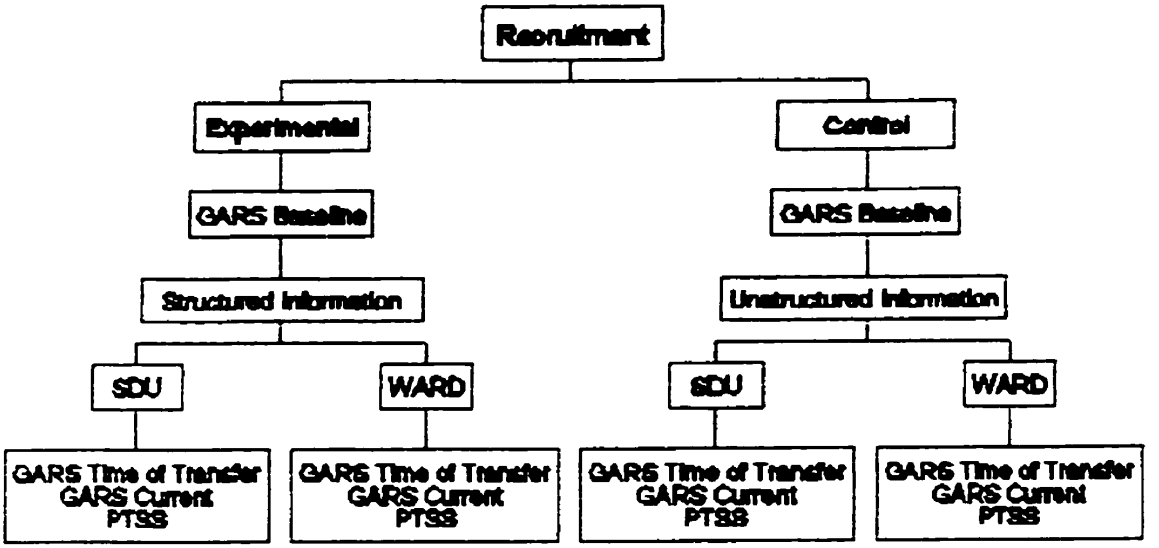
Comparison between experimental and control group in regard to level of transfer anxiety based on the two measurement tools (PTSS and GARS) was determined. The recall of transfer teaching information and level of anxiety was correlated. The open-ended questions were utilized to enhance the quantitative measures obtained by implementation of the questionnaire. The level of general anxiety as measured by the GARS and transfer anxiety as

measured by the PTSS along with surgical ICU patient length of stay was correlated to determine the relationship of ICU length of stay with level of anxiety. Figure 2: Research Design (p. 34) depicts the assignment of family member participants and the timing of the various measurements.

Population, Sample and Inclusion Criteria:

Random assignment of family member participants into the experimental and control groups took place within the surgical ICU prior to patient transfer from the ICU. The family member (spokesperson) was approached by one of the nurse research assistants when it was established the patient was likely to transfer from the ICU to an in-patient unit within 24 - 48 hours. The prospective participants were asked if they would like to participate in a nursing research study examining feelings of family members after patient transfer from surgical ICU. The family member received the degree of information outlined on the transfer information sheet with the control group receiving the usual unstructured information currently provided and the experimental group received expanded information through the structured transfer information by the nurse research assistant. Following surgical ICU transfer, the family member participant was interviewed by the nurse research assistant and asked to complete a questionnaire that identified general demographic data, information received about the ICU transfer, feelings surrounding the ICU transfer and a general assessment of anxiety.

Figure 2: Research Design



The inclusion criteria for the family member participants included:

1. English speaking and writing
2. Over eighteen years of age
3. Living in Winnipeg or staying in Winnipeg during the hospitalization of their family member
4. Spokesperson for the family in the event more than one family member exists

Nurse Research Assistants:

Following approval from the Ethical Review Committee, Faculty of Nursing, University of Manitoba, and approval for access to the Health Sciences Centre, the nurse research assistants were recruited. The purpose of the study and requirement for the researcher to be "blind" to the assignment of the participants was explained. The researcher explained the need to ensure the family member participants did not feel coerced into volunteering and reassured their decision to participate or not to participate would in no way influence the care their family member receives while in the surgical ICU or in-patient unit. The role of the nurse research assistants was to approach the family member spokesperson and invite them to participate in a nursing research study as outlined in the Protocol for Contact (Appendix D). Upon agreement to participate, the nurse research assistants provided a sheet of paper explaining the study, identifying the researcher and the thesis committee members and

consenting to participate in the study. The researcher's and advisor's names and telephone numbers were provided for future reference or questions pertaining to the study. The participant consent form (Appendix E) was signed by the family member and witnessed by the nurse research assistants. The nurse research assistants administered the GARS to the family member to determine the baseline general anxiety score for future comparison. The signed portion of the consent form was placed in a file box that served as a retrieval source for the researcher for participant enrollment. The nurse research assistants ensured the follow-up interview with the family members occurred within 48 hours of the patient transfer from surgical ICU.

The family member was identified in study reports by participant number only. The researcher and advisor will have access to the log that matches the participant number to the patient name and family member. This log will be kept under lock and key for seven to ten years and then destroyed and discarded as confidential waste.

The nurse research assistants randomly assigned the participants into either the control or experimental group by picking a number from a box. A log of the date, patient name, hospital identification number and family spokesperson was collected. The log indicated a number that corresponded to either control or experimental group. The researcher did not have access to the group assignment of the participant until after completion of data collection thereby ensuring investigator bias is removed. The nurse research assistants informed the

bedside nurse of the family members' participation in the research study. The transfer information sheet assigned by participant number alerted the nurse research assistant to the information to be provided to the specific family member. Once the transfer information was complete, the nurse research assistant placed the transfer information sheet in the file box for future correlation by the researcher once interviews were completed. The purpose of the study, need to ensure researcher is blinded to participant enrollment as well as group assignment was explained to the nurse research assistants as well as a detailed description of recruitment and information intervention and follow-up measures. The nurse research assistants were informed of the need to ensure the family was not coerced into participating in the study.

Data Collection Protocol:

Data was collected through a questionnaire (Appendix G), measurement of Perception of Transfer as Stressor Scale (PTSS), (Appendix I),and Graphical Anxiety Rating Scale (GARS), (Appendix I, J) and administered by the nurse research assistants after the patient transfer from surgical ICU. Graphical Anxiety Rating Scale (GARS) at baseline was collected at the time of study participant recruitment (Appendix H). The researcher obtained the surgical ICU length of stay from the admission, discharge, transfer book collected for the city-wide ICU data base.

Location:

The independent variable or intervention information along with the standard information was provided to the family member in the surgical ICU setting. The measures of general anxiety, transfer anxiety as well as administration of the questionnaire by the nurse research assistants took place on the in-patient unit, an alternate location or through telephone communication if identified as preference by the participant.

Data Collection Tools:

The data collection tools include the PTSS, GARS, and questionnaire. Each of the tools are appended in this document as stated above. The PTSS was used in the Leith (1998) study and reliability was evaluated for each of the five items of the tool. Reliability coefficient using Cronbach's alpha calculation produced a score of 0.5308, below the suggested minimum of 0.70 The alpha coefficient increased to 0.7143 with removal of the second question (*The ICU is a frightening place*). For the purposes of this study, this tool was administered using the same content as the Leith (1998) study but the scoring was later corrected to maintain a consistent direction of responses with highest score to most negative response. Question 3 of the PTSS reads *"I was nervous about the transfer from intensive care"*. The scoring is rated from strongly disagree to strongly agree on a scale of 1-5 with strongly disagree as the highest. The question gives a higher ranking to being nervous while the related questions in the PTSS give a higher ranking for being ready or happy about the

transfer. Cronbach's alpha reliability for the Individual PTSS corrected tool used in this study is .5889. When limiting the scoring to the measures that are most related to transfer, that is *"I was happy about the transfer from intensive care"*, *"I was nervous about the transfer from intensive care"* and *"I was ready for the transfer from intensive care"*, the Cronbach's alpha is identified as .8327 demonstrating reliability.

Further evaluation of the PTSS may produce evidence of reliable measure. Reliable measure would support the introduction of the tool at the clinical practice level to identify family members of patients transferred from the ICU at risk for transfer anxiety. The family member questionnaire was developed by Leith (1998).

The Graphical Anxiety Rating Scale (GARS) was administered to the family members at baseline and repeated at follow-up to identify GARS at the time of transfer and the current GARS measurement. Cronbach's alpha calculation is .8513 demonstrating reliability of this tool. Cronbach's alpha for the groupings (mild, moderate and severe) for GARS three measures calculation was .8072 also demonstrating reliability.

Data Analysis Plan:

The data collected in the questionnaire and measurement tools was entered into a statistical software package entitled the Statistical Package for the Social Sciences (SPSS). Each completed questionnaire and corresponding measurement tool is supported with general demographic data. The open-ended questions were analyzed using a modified method of

content analysis. Coding of comments proceeded from development of categories from themes as patterns emerge. The categories were related back to the data to determine the positive or negative impact of the patient transfer for the family member and to elicit suggestions for information for future implementation. The categories are used to describe and explain some of the quantitative findings.

The information collected through individual questions in the PTSS was compared using independent *t*- tests. The sum of the individual PTSS scores was analyzed using a the independent *t*-test to compare the experimental and control groups. The *t*-test is used to determine whether the means of the two groups are significantly different. The score for the intervention group and the score for the control group are compared to determine if the intervention had an effect.

The GARS data were grouped into mild, moderate and severe levels of anxiety based on the rating by the participant. The GARS can be categorized as interval data by measuring the millimeter markings on the tool by the family member participant or as reported by the family member participant to the nurse research assistants. The GARS data was analyzed using descriptive statistics identifying the actual scores of all groups for all three measures as well as independent *t*-tests to compare the mean scores between the groups. The GARS data scores were also correlated with surgical ICU length of stay and amount of information received through family member self-report to identify possible relationships to anxiety.

The data collected for surgical ICU length of stay was grouped in hours for five categories and was compared with the total PTSS for each group by applying Pearson correlation.

The literature review of sample sizes in comparable studies ranged from six to thirteen participants per group. This study enrolled 40 family member participants to each of the control and experimental groups. Cohen (1992) reports the need for a sample size of 18 per group for four groups to achieve Power at .80 and an alpha of .05 using one-way analysis of variance (ANOVA) and anticipating a large-sized difference between the four groups.

Ethical Considerations

Ethical approval was obtained from the Faculty of Nursing Ethical Review Committee at the University of Manitoba and facility access was granted through the Health Sciences Centre Research Impact Committee.

Informed Consent:

Consent from the research participants was collected at the time of study enrollment. The researcher did not approach the family members directly to participate but was available to clarify and answer any questions following agreement to participate. The nurse research assistants reinforced the content and continuous nature of consent, or the right to withdraw at any time, when first meeting the family member participants.

Voluntary Participation:

Measures were taken to avoid any element of coercion, perceived or actual, on the part of the family members. The bedside nurses hold a position of power over the patient and family members and they were not asked to directly approach a family to enroll in the study. The researcher was blind as to who of the family members were participating in the research study. The researcher only knew the family members who consented to participate and this was after the patient had been transferred from the surgical ICU. The researcher was not in contact with the family member participants thereby removing any position of power or influence perceived or actual over the family member.

Access to Gathered Data:

The researcher and the thesis advisor are the only persons with access to the data obtained through the questionnaires and measurements (PTSS, GARS, surgical ICU length of stay). The consent forms identify the limited availability of this data to others. The questionnaires were identified by a code number that is kept separate from the log book group assignment. The log book assignment is kept in a separate location from the completed questionnaires.

Maintenance of Confidentiality:

Each family member participant was assigned a code number. The master list of participants is kept in a location separate from the data under lock and key.

Storage of Data:

The consent forms and the log book of the family members remains in two separate locations under lock and key. The questionnaire and measurement tool data is kept in a locked space. Following data entry into the SPSS the identification of participants as either experimental or control was known. This was achieved by matching the code number of the participants with the log book of group assignment. After group identification and data entry, the log books and the questionnaires are separated and stored in a locked space and will be destroyed after a period of seven to ten years.

Plans for Future Use of Data:

The data obtained through measurement and comparison of transfer anxiety in family members of patients transferred from ICU was examined as it relates to the Model of Back Transport Experience developed by Kuhnly and Freston (1993). Following the oral defense of the researcher's thesis, the information will be presented to nursing staff in the surgical ICU and at a Nursing Research Rounds session at the Health Sciences Centre. Study findings will be presented at a national critical care nursing conference. Following data analysis submission for journal article publication will occur.

Several family members indicated benefit from this research study by receiving information about the ICU transfer and orientation to the in-patient unit in advance of transfer. The nurse research assistants benefitted by being a part of the research study and learning some

of the subtleties around consent, coercion and voluntary participation. The nurse research assistants may indirectly benefit by discovering the impact they can have on reducing family member anxiety and the relationships they may potentially build with the in-patient unit staff.

In a few interactions with the nurse research assistants a family member expressed concern about the patient transfer from surgical ICU or subsequent events and the nurse research assistants were able to provide support by making suggestions to the family member or reinforcing some of the positive events associated with the patient transfer.

Chapter Summary:

In this chapter the researcher has identified who was eligible to participate in the research study, how the participants were enrolled, what the intervention consisted of, how the phenomenon of transfer anxiety was measured and how the ethical approval was obtained to carry out this study. In the next chapter the findings of this research study will be presented

Chapter 4: Findings

Introduction

Data collection was completed during a nine month period, April 28, 1999 through January 21, 2000 during which a total of 80 family member participants were recruited. Of the 80 participants, complete data was obtained from 74 family member participants. Two of the patients were deceased prior to data completion and four family members could not be contacted for follow-up after patient transfer in spite of numerous attempts by the nurse research assistants. The sample size met the minimum requirements as indicated by a power analysis for sample size in consultation with a statistical consultant from the Manitoba Nursing Research Institute and in reference to Cohen (1992). With the exception of two family members, all potential participants that were approached agreed to participate in the study.

The participants were approached during the time their family member was a patient in the surgical ICU of the Health Sciences Centre. The participants were randomly assigned to the experimental or control groups. The nurse research assistants would first approach the family member of a patient anticipated to transfer from the surgical ICU to an in-patient unit within the next 24 to 48 hours. Once consent to participate was obtained the nurse research assistant would draw a number indicating case assignment from a box containing numbers 1 through 80. The number in the box corresponded to a file containing a complete set of study information to be collected. A method of group assignment using a random numbers table had

been previously completed. The family member received the level of transfer information specified in the group assignment. The family member completed the demographic information portion of the family member questionnaire and indicated their baseline level of anxiety using the Graphical Anxiety Rating Scale (GARS).

Demographic Characteristics of the Sample

Table 1 (p. 48) provides a summary of the demographic characteristics for the sample participants. The mean participant age for the experimental group was 49 years with a standard deviation of 14 years and 47 years with a standard deviation of 15 years for the control group. The majority of family members were female in both experimental and control groups who were employed and had attended college or university.

Table 2 (p.49) provides a summary of the characteristics of the ICU experience for the patient. Half the family members in both experimental and control groups had previous experience with an ICU. The patients experienced a mean surgical ICU length of stay of 106 hours with a standard deviation of 98 hours for the experimental group and 107 hours with a standard deviation of 106 hours for the control group. In the experimental group, 13 patients or 34% were transferred to a ward and 25 or 66% were transferred to a SDU. In the control group 19 patients representing 53% were transferred to the ward and 17 or 47% to a SDU. Of the completed family member studies assigned to the experimental group, 23 or 60% accepted a tour to the receiving unit.

Table 3 (p.50) provides a summary of the characteristics for the transfer experience. The modal transfer experience for family members in the experimental and control group was a daytime transfer, with advance notice, with an opportunity to ask questions prior to the transfer and who were not present at the time of patient transfer.

Table 1
Demographic Characteristics

	Experimental (n = 38)		Control (n = 36)	
Age	49 years	SD 14 years	47 years	SD 15 years
Sex				
• male	9	24%	8	22%
• female	29	76%	28	78%
Relationship to patient				
• spouse	14	37%	13	36%
• parent	7	18%	2	6%
• child	12	32%	18	50%
• other	5	13%	3	8%
Highest level of education				
• < high school	11	29%	8	22%
• high school	8	21%	12	33%
• community college	7	18%	6	17%
• university	8	21%	8	22%
• university grad	3	8%	1	3%
• post-graduate	1	3%	1	3%
Occupational Grouping				
• employed	27	71%	25	69%
• unemployed	5	13%	5	14%
• retired	6	16%	6	17%

Table 2
Characteristics of ICU Experience

	Experimental (n = 38)		Control (n = 36)	
Previous ICU experience				
• Yes	19	50%	18	50%
• No	19	50%	18	50%
Surgical ICU length of stay	106 hrs	SD 98 hrs	107 hrs	SD 106 hrs
ICU LOS Grouped				
• 0 -40 hours	13	34%	13	36%
• 41 -80 hours	9	24%	7	19%
• 81 - 120 hours	4	10%	5	14%
• 121 - 160 hours	3	8%	4	11%
• 160+ hours	9	24%	7	19%
Location of patient transfer				
• ward	13	34%	19	53%
• SDU	25	66%	17	47%
Accepted tour of new unit				
• Yes	23	60%		
• No	15	40%		

Table 3
Characteristics of Transfer Experience

	Experimental (n = 38)		Control (n = 36)	
Timing of Transfer				
• day time	24	75%	27	96%
• night time	8	25%	1	4%
Advance Notice				
• Yes	34	90%	35	97%
• No	4	10%	1	3%
Advance Notice in Hours				
• < 1 hour	6	16%	2	6%
• 1 - 6 hours	11	29%	12	33%
• > 6 hours	17	45%	21	58%
• after transfer	4	10%	1	3%
Opportunity to Ask Questions				
• Yes	29	76%	27	75%
• No	9	24%	9	25%
Present at Time of Transfer				
• Yes	13	34%	13	36%
• No	25	66%	23	64%

Quantitative Data Analysis

The quantitative information obtained during this research study was scored by the researcher and entered into the personal computer using the *Statistical Package for the Social Sciences (SPSS)*. The data was then reviewed to ensure accuracy of input. Data analysis was conducted using independent *t*-tests and Pearson correlations.

RESEARCH QUESTION #1:

What is the level of anxiety that family members experience after patient transfer from a surgical ICU?

Family members in both experimental and control groups experienced a moderate level of anxiety (identified as a range of 31 to 70 mm on the Graphical Anxiety Rating Scale) as determined by mean GARS scores at baseline, time of transfer and current time for both experimental and groups. The GARS scores differentiating ward from SDU also reflected moderate levels of anxiety with averaged individual score frequencies noted in Table 4 (p.52).

The experimental group and control group demonstrated a moderate amount of transfer anxiety using PTSS Corrected score measurements as demonstrated in Table 5 (p.53).

Table 4
Levels of Anxiety After Transfer from ICU - Averaged Individual Scores

	Experimental (n = 38)		Control (n = 36)	
Test - GARS				
Location: Ward				
GARS Baseline	53.85	SD 21.81	46.32	SD 31.70
GARS Transfer	38.46	SD 29.96	42.89	SD 32.63
GARS Current	31.54	SD 31.78	43.31	SD 32.94
Location: SDU				
GARS Baseline	69.60	SD 28.06	55.29	SD 33.52
GARS Transfer	68.80	SD 30.90	42.35	SD 32.60
GARS Current	63.00	SD 32.27	50.00	SD 33.17
Test - PTSS				
Location: Ward				
Happy	2.00	SD 0.71	1.84	SD 0.89
Frightened	2.92	SD 1.04	3.58	SD 1.17
Nervous	2.85	SD 1.14	2.74	SD 1.19
Ready	2.31	SD 1.03	2.05	SD 0.78
Equipment Removed	1.77	SD 0.83	1.95	SD 0.91
Location: SDU				
Happy	2.64	SD 1.22	2.06	SD 0.90
Frightened	3.24	SD 1.13	3.06	SD 1.48
Nervous	3.32	SD 1.18	3.00	SD 1.27
Ready	2.84	SD 1.11	2.53	SD 1.07
Equipment Removed	1.96	SD 0.79	1.65	SD 0.49

Table 5

Levels of Anxiety After ICU Transfer Grouped Scores

	Experimental (n = 38)		Control (n = 36)	
GARS at Baseline	n	%	n	%
Mild (0 - 30 mm)	6	16	11	31
Moderate (31 - 70 mm)	18	47	14	39
Severe (71 - 100 mm)	14	37	11	37
GARS at Transfer	n	%	n	%
Mild (0 - 30 mm)	12	32	17	47
Moderate (31 - 70 mm)	11	29	11	31
Severe (71 - 100 mm)	15	39	8	22
GARS at Current	n	%	n	%
Mild (0 - 30 mm)	13	34	13	36
Moderate (31 - 70 mm)	11	29	12	33
Severe (71 - 100 mm	14	37	11	31
PTSS (Corrected) Group	n	%	n	%
Mild (1.0 - 2.0)	12	32	9	25
Moderate (2.1 - 2.9)	15	39	21	58
Severe (3.0 - 5.0)	11	29	6	17

RESEARCH QUESTION #2:

What is the difference in transfer anxiety that family members experience after patient transfer from surgical ICU when structured transfer information is provided as compared to usual unstructured transfer information?

The GARS at baseline and current time did not differ significantly between the experimental (structured information) and control (usual unstructured information) group. The GARS at time of transfer had a mean of 58.4 (SD 33.5) for experimental group and 42.6 (SD 32.1) for the control group. Independent *t*-test was conducted to compare the means between these two groups and identified a significant difference in the mean , $t = -2.065$, $df = 72$, $p = .043$. The change in anxiety from time of transfer to current time differed in the two groups with the experimental group mean of 1.8 (SD .71) and control group mean 2.2 (SD .77). Independent *t*-test was significant at $t = 2.505$, $df = 72$, $p = .015$. The individual PTSS scores did not identify significant differences with the exception of question 1: *"I was happy about the transfer from ICU"*. The experimental group demonstrated a mean of 2.4 (SD 1.1) and the control group demonstrated a mean score of 1.9 (SD 0.8) . This was significant by independent *t*-test at $t = =2.033$, $df = 72$, $p = .045$. The higher score indicates more anxiety about the patient transfer and is therefore consistent with the findings of increased GARS at time of transfer in the experimental group.

RESEARCH QUESTION #3:

What is the difference in transfer anxiety that family members experience after patient transfer from surgical ICU to a step-down unit as compared to a general in-patient unit?

The GARS at baseline, time of transfer and current time differed significantly between ward and SDU as depicted in Table 6 (p.56). The change in anxiety from baseline to transfer, baseline to current and transfer to current did not differ significantly. Individual components of the PTSS identified significant differences in *"I was happy about the transfer from intensive care" and "I was ready for the transfer from intensive care"* identified in Table 6. The total score for PTSS limited that included *"I was happy about the transfer from intensive care", "I was ready for the transfer from intensive care" and "I was nervous about the transfer from intensive care"* is identified as PTSS total limited and demonstrates significant differences between the locations of ward and SDU. The significant mean differences in the PTSS scores for the ward compared with the SDU are identified in Table 6.

Table 6
Comparisons of Anxiety Between Ward and SDU

	Ward (n = 32)		SDU (n = 42)				
	Mean	SD	Mean	SD	*t*	df	p
GARS baseline	49	28	64	31	-2.077	72	.041*
GARS transfer	41	31	58	34	-2.214	72	.030*
GARS current	40	33	58	33	-2.261	72	.027*
"Happy"	2.0	82	2.4	1.1	-2.112	72	.038*
"Frightened"	3.3	1.1	3.2	1.3	0.511	72	.611
"Nervous"	2.8	1.2	3.2	1.2	-1.466	72	.147
"Ready"	2.2	0.9	2.7	1.1	-2.365	72	.021*
"Equipment"	1.9	0.9	1.8	0.7	0.229	72	.820
PTSS Total Score	12.0	2.9	13.4	3.5	-1.723	72	.089
PTSS total limited	6.8	2.4	8.3	3.0	-2.266	72	.026*

* significant at 0.05 confidence level

RESEARCH QUESTION #4:

What is the correlation between family member transfer anxiety following patient transfer from surgical ICU to in-patient unit and ICU length of stay?

Pearson Correlation calculations were completed for SICU hours and all measures of anxiety, GARS baseline, GARS time of transfer, GARS current time, groupings for the three measures and the PTSS scores individual and grouped. There was no demonstration of correlation between ICU length of stay and family anxiety or transfer anxiety.

RESEARCH QUESTION #5:

What information do family members need related to patient transfer from a surgical ICU?

This question was answered using modified content analysis as identified in questions coded by experimental group (structured information) and control group (usual unstructured information) and is more thoroughly discussed in the analysis of open-ended questions section. To summarize, the content of questions asked by family members did not differ from experimental to control group. The questions are categorized as level of care in receiving unit, readiness to transfer from intensive care, a need to know what was expected of family members and the visiting restrictions. Other questions included nutrition, mobility, level of observation, physician coverage, next steps and environment. The experimental group asked about the supports that were available to them.

RESEARCH QUESTION #6:

What is the correlation between reported amount of information received prior to surgical ICU transfer and level of anxiety?

Information is summarized in Table 7 (p.59): Information Provided to Family Members from SICU and In-Patient Unit and Table 8 (p.60): Information Provided to Family Members From SICU for Control and Experimental Groups. Pearson correlation was completed for all measures of family member anxiety (GARS baseline, time of transfer and current time) as well as the individual PTSS scores and grouped scores. The total information from ICU correlated positively with GARS current measure (Pearson correlation = .232, n = 74, significance = .047).

The total amount of information received from the nursing staff following patient transfer to the in-patient unit correlated positively with GARS current (Pearson correlation = .253, n = 74, significance = .030), question #5 on PTSS *"It is good to have some of the tubes, cardiac leads and monitoring equipment removed"* (Pearson correlation = .247, n = 74, significance = .034) and the total PTSS scores (Pearson correlation = .231, n = 74, significance = .047).

Table 7: Information Provided to Family Members from SICU and In-Patient Unit (n = 74)

Information Received and Location	Yes	% Yes	No	% No
Information From ICU				
• Current Health Status	59	80%	15	20%
• Reason for Patient Transfer	53	72%	21	28%
• Time/Date of Transfer	60	81%	14	19%
• Description of New Unit	56	76%	18	24%
• Description of Nursing Care on New Unit	54	73%	20	27%
Information From In-Patient Unit				
• Contact Nursing Station	26	35%	48	65%
• Description of New Unit	24	32%	49	68%
• Description of Nursing Care	30	40%	44	60%
• Visiting Hour Policy	35	46%	40	54%

Table 8: Information Provided to Family Members from SICU for Control and Experimental Groups

	Experimental (n = 38)				Control (n = 36)			
	Yes	%	No	%	Yes	%	No	%
Information Provided in ICU								
• Current Health Status	28	38	10	13	31	42	5	7
• Reason for Transfer	26	35	12	16	27	36	9	12
• Time/Date of Transfer	29	39	9	12	31	42	5	7
• Description New Unit	31	42	7	9	25	34	11	15
• Description Nursing Care on New Unit	32	43	6	8	22	30	14	19

Additional Analyses A: Correlation Among Anxiety Measures

The measures of anxiety obtained in this study were correlated to evaluate the relationship of one measurement tool to another. The results of this correlation are summarized as Table 9 (p.62): Correlations Of GARS at Baseline With GARS Transfer, GARS Current and PTSS. Statistically significant correlation ranged from -2.72 to .743 indicating a mixture of weak correlation through strong correlation assuming a weak correlation as .1 to .3, moderate correlation as .4 to .5 and a strong correlation greater than .5 (Burns et al, 1999).

The tools and measures demonstrated several correlations but for the purposes of this study, the results are reported for GARS Baseline through all measures as the GARS Baseline had a relationship with subsequent measures of anxiety.

Table 9: Correlations Of GARS at Baseline With GARS Transfer, GARS Current and PTSS

Anxiety Tool	Baseline GARS		
	r	significance (2 tailed)	n
GARS			
• GARS Baseline	1.000	-	-
• GARS Transfer	.742**	.000	74
• GARS Current	.536**	.000	74
• Change in Family Anxiety Baseline to Transfer	-.135	.253	74
• Change in Family Anxiety Baseline to Current	-.300 **	.009	74
• Change in Family Anxiety Transfer to Current	-.272*	.019	74
PTSS			
• Happy	.386 **	.001	74
• Frightened	-.201	.086	74
• Nervous (corrected)	.438 **	.000	74
• Ready	.404 **	.000	74
• Equipment Removed	.207	.076	74
• Total	.390 **	.001	74
• Total Limited	.473 **	.000	74

* correlation is significant at 0.05 level (2 tailed)

** correlation is significant at 0.01 level (2 tailed)

Analysis of Open-Ended Questions

The Family Member Questionnaire was administered to all study participants at the time of follow-up by the nurse research assistants. A component of this questionnaire were three open-ended questions about the surgical ICU transfer experience as follows:

1. *How do you feel about the transfer from intensive care?*
2. *What was positive or helpful about the transfer from intensive care?*
3. *What was negative or unhelpful about the transfer from intensive care?*

Family members were also asked if they had any other comments they'd like to share.

The data obtained through the questionnaire was analyzed using a method of identifying themes and category groups. The responses were read in their entirety by the researcher then individually transcribed by question and re-read by the researcher. The second reading generated a list of categories or themes. The themes were further explored and generated groupings in broader categories.

How did you feel about the transfer from intensive care?

POSITIVE RESPONSE

When asked how they felt about the patient transfer from the surgical ICU, over 53% of respondents had a positive response as evidenced by the repeated themes "progress, relief, good, happy". These family members interpreted the transfer from surgical ICU as a positive step forward and was indicative of progress:

"She's stable enough to be moved. Stable felt good".

Some family members identified relief as their response to the patient transfer:

"Very relieved to have him transferred".

It is likely the family members that identify positive responses to the patient transfer will exhibit less transfer anxiety than those viewing the transfer as negative. The group indicating a positive response to the transfer experienced mild transfer anxiety as indicated by the mean corrected Perception of Transfer as a Stressor Scale (PTSS) group score in Table 10 (p. 75): Combined Qualitative and Quantitative Responses: How Do You Feel About the Transfer From ICU?

AMBIVALENT RESPONSE

Greater than 20% of family members described their feelings about the surgical ICU transfer as mixed or ambivalent:

"We have mixed feelings. We feel anxious and relief that they felt he was ready for the next stage".

These family members identified both positive and negative responses to the patient transfer. Their mean corrected PTSS scores were in the range of moderate transfer anxiety. The transfer anxiety could hypothetically be reduced if the transferring nurse focused on the transfer as a positive event for the patient.

NEGATIVE RESPONSE

Slightly greater than 19% of family member respondents identified a negative

experience to the surgical ICU transfer as evidenced by responses such as "anxious, nervous, concerned or worried".

"I was a little concerned she was doing all right. It looked to me like she wasn't doing very well".

These family members viewed the surgical ICU transfer as worrisome and stressful. It is likely the family members identifying the patient transfer as negative will demonstrate a higher degree of transfer anxiety. The mean corrected PTSS grouped score for family members is in the higher range of moderate transfer anxiety.

NEUTRAL RESPONSE

Slightly less than 7% of family member respondents identified the patient transfer in a neutral manner:

"If the physicians feel that she is ready things must be better".

The mean corrected PTSS group score is in the range of mild anxiety suggesting a view that neutrality does not contribute to transfer anxiety.

What was positive or helpful about the transfer from intensive care?

STABLE, IMPROVING

Greater than 48% of family members identified the transfer from surgical ICU is evidence that the patient was improving and described the transfer as a step forward or getting better.

"She's doing better. I know she's getting better from worse to better".

Family members that view the patient transfer as a sign of improvement are less likely to experience transfer anxiety.

ENVIRONMENT

Over 16% of family members identified the transfer as positive because of the change in physical environment:

"Quieter down there. Beside big window with lots of sunshine".

Family members that view the physical surrounding of the surgical ICU negatively because of the crowding, noise and absence of natural lighting may view the move as positive and experience less transfer anxiety.

STUDY INFORMATION, TOUR

Over 12% of family members viewed their interaction with the nurse research assistants as a positive aspect. This category was identified more frequently than advance notice and care giver impressions and may contribute to a reduction in transfer anxiety.

"I think you [the nurse research assistant] made all the difference. I knew what was going on. I think everyone should have a liaison to help the transition from all the (total) care to whatever they can get. The ward is so busy and J. still has high needs".

The follow-up from the nurse research assistants as well as the tour and provision of information was positively received and may have contributed to a reduction in transfer anxiety.

CARE GIVER IMPRESSION

Over 6% of family members identified the actions of a health care provider as a positive aspect of the patient transfer:

"The RN assessed immediately and was open to the families discussion. The resident was very thorough and discussed his history".

The initial impression the family member receives from the staff of the new unit has the ability to influence the transfer anxiety experienced by the family members.

NEGATIVE

Over 5% of family members could not identify anything positive about the patient transfer:

"I wish he were still in (the) unit right now".

If the family member cannot identify any aspect of the transfer as positive, it is likely they will experience significant transfer anxiety.

ADVANCE NOTICE

Nearly 4% of family members identified receiving advance notice of the transfer as positive.

"We were told us she would be transferred"

Advance notice of the patient transfer may result in a reduction of transfer anxiety for the family member by preparing for and anticipating the event.

What was negative or unhelpful about the transfer from ICU?

NOTHING

Over 49% of family members were unable to identify a negative response to the patient transfer from surgical ICU:

"I can't find anything negative. We were very impressed with the time given to answer all questions and concerns. The visits from upstairs (nursing) were very positive and supportive".

It is likely the family member that cannot identify a negative response to the patient transfer will not experience transfer anxiety.

LACK OF INFORMATION, MISINFORMATION

Over 25% of family members had a negative response to the patient transfer secondary to delays in transferring patient, misinformation from patient inquiry, no advance notice or lack of information from either the ICU or the ward:

"We received no information from the receiving unit. We would have been lost"

"It was confusing as the patient went from surgical ICU to CT scan to D3 step-down unit. No one knew where he was. ".

The provision of clear, accurate communication on an ongoing basis to family members and improvements in inter-facility communication is likely to reduce family member anxiety at the time of patient transfer.

NOT READY

Nearly 12% of family members did not feel the patient was ready for surgical ICU transfer:

"When you see (the) patient with all the monitor equipment you wonder why he could be ready".

The family member that feels the patient is not ready for surgical ICU transfer is likely to experience a significant amount of transfer anxiety.

LEVEL OF CARE

Over 10% of family members identified concern with the level of care on the receiving unit as a negative aspect of patient transfer.

"They treated (the) whole patient in Intensive Care. We see staff burn out in the step-down unit and they only treat the injuries".

If a family member perceives the level of care for the patient as inadequate, they are likely to experience significant transfer anxiety.

ENVIRONMENT

Nearly 3% of family members identified the ward environment as a negative aspect of patient transfer:

"There is less space in the room. It is more crowded on the ward".

The physical environment may negatively impact the patient transfer for a family member and result in transfer anxiety.

Other Comments

In addition to the three open-ended questions, the family member participants were asked if they had any other comments or questions at the conclusion of the interview. An analysis of their comments revealed some additional categories.

HOSPITAL STAFF

Over 43% of family members made a comment in regard to roles of hospital staff and the levels of care provided:

"The hospital is so short staffed. It's the Governments fault. The patients don't get what they need. It scares me to think what happens to other families who don't have a strong family advocate".

"The overall quality of care in the Intensive Care is very good. It made this experience better and helpful, and so much easier. It decreased both anxiety and stress+++. The staff made a difficult situation much easier".

Family member comments were both positive and negative about hospital staff in many areas of the hospital providing diverse roles. The impression a family member recieves from hospital staff may have an impact on the anxiety they feel at any time during the patient hospitalization.

COMMUNICATION

Nearly 23 % of family members identified an aspect of communication in their comments:

"We are all anxious, we just need to be told stuff. In SICU everyone told us everything, and that felt good. That UNIT was great.

We went from bad (CCU) to great (SICU) to good (A3 step down unit).
The unit that was to be (or supposed to be) the most stressful was the least (SICU).
The staff were very helpful. Great nursing level of care and great communication".

"We weren't always given the same information. There were different nurses every day.
There is inconsistent communication between all of (6) siblings and staff. It was hard to keep up to all the different news from everyone".

The content of both these examples is very different but the message is consistent; clear communication about the events and ongoing family updates are valued and could potentially reduce family anxiety at any time during the hospital stay.

POSITIVE, GENERAL

Over 15% of family members expressed general positive comments about their experiences:

"We were extremely impressed with the care he got in ICU. We had a very pleasant experience, one nurse after another".

Positive experiences for the family members as a potential to reduce family member anxiety throughout the hospital stay.

ENVIRONMENT

Over 10% of family members identified an aspect of the physical environment that may have contributed to their anxiety:

"Something traumatic happened to us. A brain dead man admitted.
We were worried our Dad would be offended because he had just had an MI.
We would like to suggest he be removed from this area to allow his family to grieve alone and not upset the other patients in unit.

The physical environment of the surgical ICU is very crowded and noisy and may negatively contribute to the anxiety experienced by the family member. Close proximity to all patients and an open unit concept does not provide for privacy from other patients in the unit.

In addition to the questions asked of the family members during the follow-up interview, family members were asked if they had any questions at the time the transfer information was provided in the surgical ICU. The information was collated separately for the group assigned to the structured information (experimental) from the usual unstructured information (control).

Structured Transfer Information (Experimental Group Questions)

The family members of patients assigned to the experimental group received structured transfer information that included notification of anticipated transfer, description of in-patient unit environment, identification of ongoing monitoring and physician coverage and the nurse to patient workload on the receiving unit. Nursing care and goal to increase patient self-care was explained as well as the potential to feel uncomfortable about the transfer and an offer of support from other health team disciplines. A tour of the receiving unit was offered.

The family member questions were focused around level of care on the receiving unit, visiting restrictions, physical environment, ongoing physician update information, mobility, nutrition and supports available. The content of the questions in the experimental group did not differ greatly from the control group although the questions appear to be more clearly articulated. The questions asked by family members are important for ICU nurses to be aware

of and providing this information may reduce family member anxiety following ICU patient transfer.

Usual Unstructured Information (Control Group Questions)

The control group was informed of the patient's near readiness to transfer from the surgical ICU to the in-patient unit during the upcoming 24 - 48 hours. The family members that were in the control group and received the usual unstructured information asked questions regarding pending patient transfer and indicated a need to know what to expect with the transfer out of surgical ICU in terms of level of care and readiness to transfer. The family members also identified a need to know what was expected of them and what the level of care on the in-patient unit would be as well as the visiting restrictions. Other questions included nutrition, mobility, level of observation, physician coverage, next steps and environment. This information is very useful for ICU nurses to know and may contribute to reduction in family member anxiety at the time of patient transfer by anticipation and provision of this information.

Analysis of Combined Quantitative and Questionnaire Responses

Table 10 (p. 75) identifies family members responses to the question *"How do you feel about the transfer from ICU"* by ascending order of their PTSS corrected averaged scores. This analysis allows a comparison of the quantitative findings with the responses to the open-ended questions and identifies a link to the level of transfer anxiety. This method of comparing the quantitative and qualitative findings was utilized by Leith (1998) to triangulate the findings

from her study. In the current study the range of PTSS averaged scores is from 1.6 to 4.6. Transfer anxiety in the range of 1.0 to 2.0 indicates mild anxiety and the comments to the open-ended question associated with a mild anxiety score are primarily positive but also neutral or ambivalent. It stands to reason that a positive response to the patient transfer would result in a lower level of family member anxiety.

Transfer anxiety scores in the range of 2.1 to 3.9 describe moderate anxiety and is identified in the categories as positive, neutral, ambivalent and negative. A moderate level of transfer anxiety is expected from family members that feel negative or experience mixed feelings or ambivalence toward the ICU transfer.

Transfer anxiety scores in the range of 4.0 to 5.0 denote a severe level of anxiety and coincided with negative or ambivalent responses to the transfer from family members.

Table 10
Combined Quantitative and Questionnaire Responses
How do you feel about the transfer from ICU?

PTSS Corrected Total Averaged Score	Case Comments	Comment Category	Comment Theme
1.6	My brother was improving.	Positive	Progress
	Felt he was getting better. Was relieved and happy.	Positive	Progress Relief
	We felt OK. We knew she would be OK	Positive	Fine, O.K., Good
	Positive.	Positive	Fine, O.K., Good
1.8	Comfortable - seen it as progress. That was our goal	Positive	Progress
	A step towards recovery. Trusted in the level of care in SICU that she was ready for SDU.	Positive	Progress Care giver Trust
	Very good. Took it that he was getting better & was moving.	Positive	Progress
	Feel Great.	Positive	Fine, O.K., Great
	Felt good.	Positive	Fine, O.K., Good
	Very positive step in C's recovery. C felt well cared for. Better there for her, she was aware of lots +++ noise level. Now less monitoring, less noise. Positive feelings, Still 1:1 nursing care on ward for a few days.	Positive	Fine, O.K., Good Progress Relief

PTSS Corrected Total Averaged Score	Case Comments	Comment Category	Comment Theme
1.8 cont'd	I was expecting the transfer. I knew the unit was very busy and they would need the bed.	Neutral	Needed bed
	A little anxious. Went from high level of care with high ratio nurse to patient to low level, lots of patients to nurses. Would of preferred step down unit (she came from one pre-op).	Negative	Anxious, Apprehensive, Concerned
2.0	Made me feel good inside. Seen as a step forward.	Positive	Fine, O.K., Good Progress
	Good.	Positive	Fine, O.K., Good
	I wasn't concerned. I knew it was a positive thing. They wouldn't have transferred her until she was ready.	Positive	Fine, O.K., Good Care giver Trust
	Once I saw how good she was being cared for on the ward I felt OK.	Positive	Fine, O.K., Good
	I felt that J was improving.	Positive	Progress
	A step-down. The fact that he was doing better and that he may be alright. A good thing.	Positive	Progress
	If the physicians feel that she is ready things must be better.	Neutral	Care giver Trust

PTSS Corrected Total Averaged Score	Case Comments	Comment Category	Comment Theme
2.2	Felt positive. Stage in healing that move was possible. Happy that he would receive specialized burn care. Going for visiting whenever; limited time (difficult). Patient delusional therefore wanted to visit and be with him often to support him.	Positive	Fine, O.K., Good Progress
	That was good. Done in professional manner.	Positive	Fine, O.K., Good
	I felt good. I felt it showed progression towards going out of hospital.	Positive	Fine, O.K., Good Progress
	Very happy. Meant he was getting better. ICU Psychosis, better leaving.	Positive	Fine, O.K., Good Progress
	Felt fine because husband was now doing better	Positive	Progress
	Very relieved to have him transferred.	Positive	Relief
	I felt that she was ready if the doctors thought she was doing better.	Neutral	Care giver Trust

PTSS Corrected Total Averaged Score	Case Comments	Comment Category	Comment Theme
2.2 cont'd	Happy that D was well enough to be transferred out of ICU. Seen as a positive step. Felt small amount of anxiety with his coming down.	Ambivalent	Fine, O.K., Good Progress Anxious, Apprehensive, Concerned
	Still pretty anxious especially without the one to one. Some relief that she was stable enough to go down.	Ambivalent	Anxious, Apprehensive, Concerned Relief
	Mixed feelings. Anxious &... ... relief... ...that they felt he was ready for the next stage.	Ambivalent	Anxious, Apprehensive, Concerned Relief Progress
	I thought it was too soon. I'm not a specialist, but they said she was ready.	Negative	Not Ready for Transfer

PTSS Corrected Total Averaged Score	Case Comments	Comment Category	Comment Theme
2.4	Very good.	Positive	Fine, O.K., Good
	I felt good about the transfer	Positive	Fine, O.K., Good
	Good... ... relieved ... ...he was making progress so as not to require ICU care any longer.	Positive	Fine, O.K., Good Relief Progress
	Fine with it.	Positive	Fine, O.K., Good
	I thought it was a good thing that she was able to go. I thought it was OK.	Positive	Fine, O.K., Good
	Comfortable.	Positive	Fine, O.K., Good
	Glad that it happened. "She's stable enough to be moved. Stable" felt good.	Positive	Fine, O.K., Good Progress
	Thought it was a step up; must be improving. Glad to be moving ahead. A sign that he would be able to have his surgery that he needed (Plastics). Is well enough to be able to have OR done.	Positive	Progress Fine, O.K., Good
	My husband must have been ready because the doctors are letting him go to the ward.	Neutral	Care giver Trust
2.6	Relief, ...meant that she was better.	Positive	Relief Progress

FT33 Corrected Total Averaged Score	Case Comments	Comment Category	Comment Theme
2.6 cont'd	A little bit relieved. Didn't need Intensive Care	Positive	Relief Progress
	Surprised how quickly it occurred. Not a bad idea but surprised. Took as a good sign, didn't feel like he was rushed from ICU.	Positive	Progress
	Happy that she was getting out of Intensive Care. When you are getting out of Intensive Care it means you're getting better. Intensive Care is a scary place for me.	Positive	Fine, O.K., Good Progress
	Once I was there I was confident I could see what was going on.	Positive	Fine, O.K., Good
	Once he got down there, I didn't think it was a good idea. His ICP and BP were not monitored anymore. I didn't like that. Today he was sitting up looking outside in his chair. He's doing more. My Dads less anxious. Hands not tied anymore.	Ambivalent	Not Ready for Transfer Progress
	Good & happy, ...making progress, ...nervous.	Ambivalent	Fine, O.K., Good Progress Anxious, Apprehensive, Concerned

PT33 Corrected Total Averaged Score	Case Comments	Comment Category	Comment Theme
2.6 cont'd	Felt relief ... but concern. Not sure what would happen next.	Ambivalent	Relief Anxious, Apprehensive, Concerned
	Thankful & grateful that she was getting better. As long as we can trust her care givers I feel OK. Worried who's gonna be her nurse now. Up to 3 nurses a day....	Ambivalent	Progress Care giver Trust Anxious, Apprehensive, Concerned
	Very anxious - stayed for awhile with him	Negative	Anxious, Apprehensive, Concerned
2.8	Felt that he was improving because he was being transferred.	Positive	Progress
	Very good. It went well for us.	Positive	Fine, O.K., Good
	We really loved the care in intensive care.	Neutral	Liked ICU
	Felt OK with it. Happy that she didn't require that level of care ... ...(hopefully).	Ambivalent	Fine, O.K., Good Anxious, Apprehensive, Concerned

FTSS Corrected Total Averaged Score	Case Comments	Comment Category	Comment Theme
2.8 cont'd	Better after saw tour. Not worried about that he would have care right away if something would happen. Too sudden	Ambivalent	Fine, O.K., Good Not Ready for Transfer
	In what way?? Not sure how to answer that. A few days earlier had intracranial pressure problem (high), BP problem, wondered if he was ready. Have faith in the decision made.	Ambivalent	Not Ready for Transfer Care giver Trust
	Hopefully ... ...that he was getting better	Ambivalent	Anxious, Apprehensive, Concerned Progress
	Now that I'm in SDU & see what's going on would rather have J in the unit (ICU) or out on the ward. I don't like what I'm seeing in the SDU.	Negative	Not Ready for Transfer
3.0	Fine.	Positive	Fine, O.K., Good
	Apprehensive re "leaving safe place" in SICU and the "best care". Exciting because he "didn't need ICU anymore"	Ambivalent	Anxious, Apprehensive, Concerned
	I was a little concerned she was doing alright. It looked to me like she wasn't doing very well.	Negative	Anxious, Apprehensive, Concerned

FTSS Corrected Total Averaged Score	Case Comments	Comment Category	Comment Theme
3.2	We felt that our mother was improving.	Positive	Progress
	My anxiety was very high. Two years ago he was transferred to SDU. It wasn't positive. This was positive; 2 patients and 2 nurses therefore 1:1. Worry about if one of the patients gets sicker, all the other patients suffer.	Ambivalent	Anxious, Apprehensive, Concerned Fine, O.K., Good Anxious, Apprehensive, Concerned
	Very worried. Not ready for the transfer.	Negative	Anxious, Apprehensive, Concerned Not Ready for Transfer
3.4	Wasn't too comfortable yesterday. Haven't decided yet today how I feel.	Negative	Anxious, Apprehensive, Concerned

PTSS Corrected Total Averaged Score	Case Comments	Comment Category	Comment Theme
3.6	At the time I didn't feel he was ready ... ...but he seems to be doing OK. Still on oxygen mask. Pain medication different because they can't give what you use upstairs (I think it was Propofol). They still are trying new things.	Ambivalent	Not Ready for Transfer Fine, O.K., Good
	I'm kinda nervous. I'm hesitant that they can give the whole care for him. Lots of patients per nurse. Not enough help there. They change gown +/or bed sheets only when really dirty. I now know how to do it, so I can help.	Negative	Anxious, Apprehensive, Concerned
	I was worried what kind of care he was going to get on the ward. Depending on which nurse had him, I would not be as worried.	Negative	Anxious, Apprehensive, Concerned
	We were very worried that he was not going to be looked at as much as he needed.	Negative	Anxious, Apprehensive, Concerned
	Weren't relaxed. I was anxious and worried that no one would see him choke, cough, bleed again & no one would be there for him.	Negative	Anxious, Apprehensive, Concerned
	Too sudden	Negative	Not Ready for Transfer

PTSS Corrected Total Averaged Score	Case Comments	Comment Category	Comment Theme
4.2	Relieved that he left the intensive care. ++ worried still, ...but still isn't doing any better. ++upset	Ambivalent	Relief Anxious, Apprehensive, Concerned
	We felt she needed one on one nursing care and she should not have been transferred	Negative	Not Ready for Transfer
4.6	A big "10". Reason because Dad stable for 24 hours off ventilator but he could still go down (condition) really fast. Quality of care went down. Concerned with other people in SDU getting sicker and the other patients not being looked after. The bed shortage and nursing shortage bothers me.	Negative	Anxious, Apprehensive, Concerned

Chapter Summary

The data collected in this study was analyzed using descriptive statistics to describe the populations of the two groups and independent *t*-tests to compare the means of the two groups. Pearson correlation calculations were conducted to determine potential relationships between variables.

Family member anxiety differed between experimental and control groups at the time of patient transfer from ICU with the actual mean scores greater in the experimental group as compared to the control group. The change in family member anxiety from time of patient transfer to current time differed between the two groups. The experimental and control groups differed in their happiness about the ICU transfer. Measures of family anxiety differed significantly for all GARS measures (baseline, transfer and current) when comparing ward to SDU. The family members of patients transferred to SDU had significantly greater measures of anxiety and transfer anxiety than those transferred to a general in-patient unit. The groups by location (SDU or general in-patient unit) also differed in their happiness about the transfer and readiness for the transfer. They also differed in the combined grouping of happiness, readiness and nervousness about the transfer from ICU identified as PTSS limited group with the SDU group scoring higher in anxiety measures.

There was no correlation between number of hours in ICU and family member anxiety or transfer anxiety. Family members identify a need for information about the level of care on

the receiving unit, patient's readiness for transfer from ICU, what is expected of the family, visiting hours and restrictions, nutrition, mobility, level of observation on receiving unit, anticipated next steps, environment, supports available and physician communication.

The amount of information provided in the ICU and by the receiving unit had a relationship on the third (current) GARS measure. Information from the receiving unit nursing staff also influenced transfer anxiety identified through the total PTSS scores.

The majority of family members view the transfer from ICU as a positive event. Those that were ambivalent or negative may exhibit transfer anxiety and could potentially benefit from early identification and intervention to focus the transfer as a positive event. The family members identified concerns and areas for improvement about the communication within the hospital and the physical environment.

Chapter 5: Discussion

Introduction:

The purpose of this experimental study was to evaluate the relationship of a structured transfer information process on family member transfer anxiety. This study was an extension of a descriptive study conducted by Leith (1998) that identified a moderate to severe level of transfer anxiety in patients and family members. It is important to evaluate the outcome of a nursing intervention, in this case structured information, prior to wide-scale implementation.

Discussion of Findings

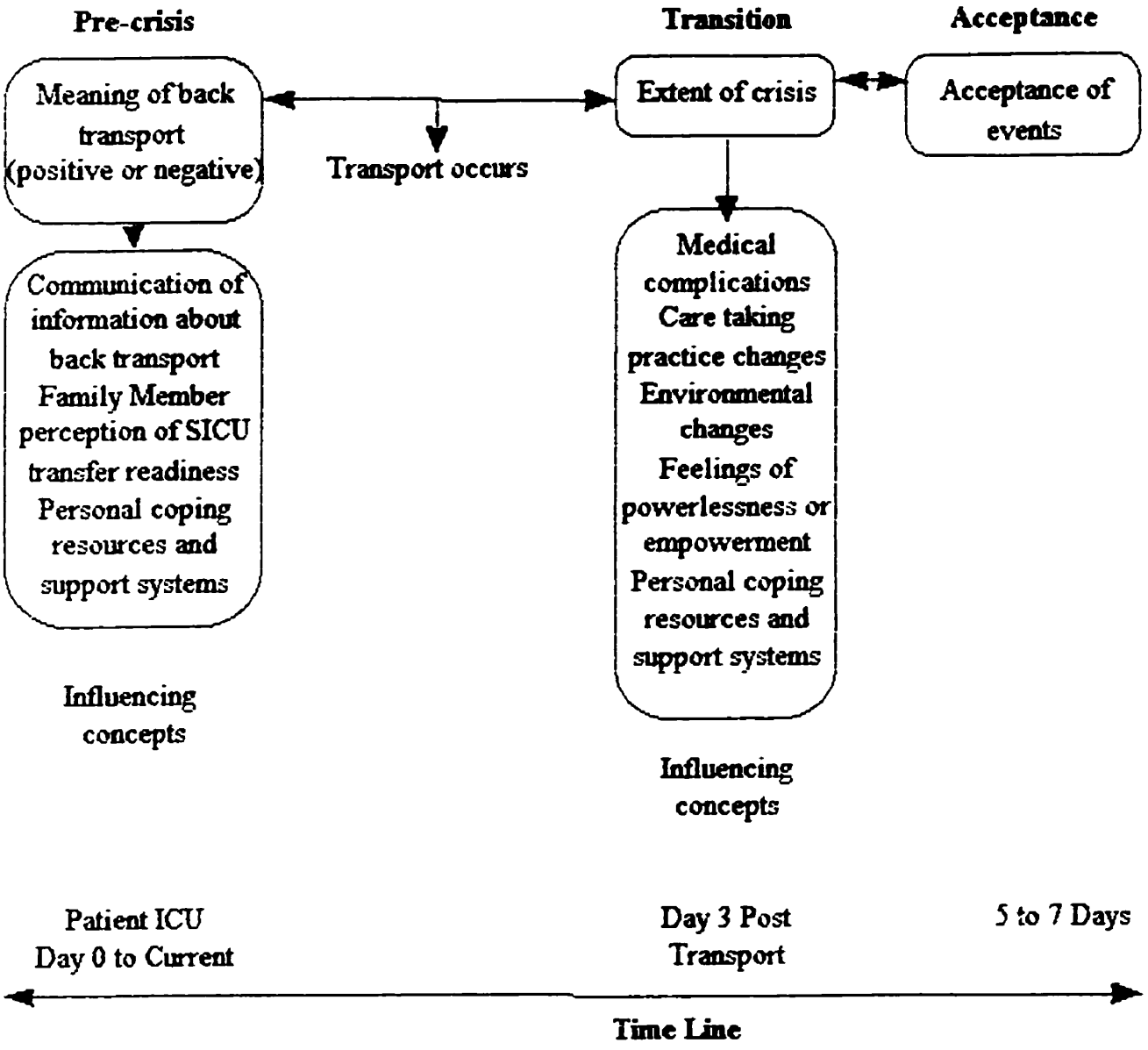
Application of Kuhnly's Model of Back Transport Experience to transfer anxiety in family members of patients transferred from SICU to an in-patient unit

The conceptual framework used to guide this study was Kuhnly's Model of Back Transport Experience (Kuhnly et al, 1993). This model suggests the communication of information to parents of infants in a neonatal intensive care unit (NICU) may influence the extent by which the transfer is considered a crisis and subsequently influence their transition and acceptance of the transfer. The time of back transport is termed Precrisis. The provision of information at the Pre-crisis stage is an influencing concept to the meaning of the back transport as a positive or negative event as described by Kuhnly et al (1990). A positive influence at the Precrisis stage may reduce the extent of the crisis at the Transition stage which occurs over the first 72 hours following back transport (Figure 1, p.11 in Chapter 1 provides a schematic

representation of this model).

In this study family members received varying levels of information about the surgical ICU transfer. The majority of family members viewed the transfer as a positive event while a significant number (47%) viewed the transfer with ambivalence, neutrality or negativity. Those that viewed the experience negatively also indicated a perception the patient was not ready for SICU transfer. Based on this finding, the model for this study is modified to include family member perception of SICU transfer readiness as an influencing concept (Figure 3, p. 90). The assumption that personal coping resources and support systems may influence the Pre-crisis stage has also been incorporated into the modified model. Intervention by the practicing nurse through provision of information may reduce subsequent transfer anxiety of the family member at the actual time of transfer or during the first 72 hours following patient transfer. The practicing nurse should consider coordinating a care conference to include the family member and in-patient unit staff for family members or patients exhibiting a high level of transfer anxiety in an attempt to positively influence the event and to prepare family members for the next steps.

Figure 3: Modified Model of Back Transport Experience



Reducing transfer anxiety by providing family members with information related to patient transfer from SICU

The provision of structured transfer information to family members before patient transfer from SICU has been suggested in the literature to reduce family member transfer anxiety (Saarman, 1995; Jenkins et al, 1995; Schactman, 1987; Wesson, 1997; Quinn et al, 1996; Leske, 1991; Poe, 1982; Schwartz et al, 1979; Bokinskie, 1992; Dodds-Azzopardi et al, 1995; Roberts, 1976). Findings from this study indicate the majority of family members received information prior to patient transfer that included the patient's current health status, the reason for patient transfer, the approximate time and date of patient transfer, a description of the unit the patient is transferring to and a general description of the nursing care on the new unit. Conversely, the family members in this study report a majority did not receive information from the in-patient unit on how to contact the nursing station, a description of the new unit, a general description of nursing care on the new unit or visiting hour policies on the new unit.

This study identified an increase in family anxiety as measured by GARS from time of patient transfer to current time measure in the control group and a consistent decline in anxiety for all three GARS measures (baseline, time of transfer and current time) in the experimental group. This finding suggests the provision of structured transfer information to family members has a positive effect on subsequent measures of family anxiety. A greater percentage of family members self-report receiving information on patient's current health status, a description of

new unit and a general description of nursing care on the new unit in the experimental group as compared to the control group (Table 7 p. 59). This may explain the reduction in subsequent GARS measures for the experimental group. Family member self-report may not be a reliable measure to definitively determine the amount of information provided to individual family members. The experimental intervention did provide specific information on current health status, the nursing care on the new unit and a general description of the new unit and family member self-report did differ between the two groups in this identification.

The main hypothesis of this study was that provision of structured transfer information to family members would reduce family member anxiety and transfer anxiety. The GARS measures did decline in the experimental group from baseline through transfer and current level supporting this hypothesis. Corrected PTSS scores identified 68% of the experimental group compared with 75% of control participants experienced a moderate to severe level of transfer anxiety. There is a weak positive correlation between the amount of information provided and the current time GARS measure. This is an interesting finding and may have been influenced by the greater percentage of patients transferred to SDU as compared to general in-patient unit. It was surprising to note the actual scores of the SDU group were higher than the general in-patient unit group. The third measure of the GARS, current time, during the follow-up interview may have coincided with a second transfer of the patient, from the SDU to the general ward.

There was a consistent reduction in the direction of anxiety in the experimental group

compared to the control group for SDU as well as the ward. This may be more relevant than the actual score as it demonstrates a reduction in family member anxiety through the patient's hospital stay and transfer event and supports the hypothesis that structured information will lead to a reduction in transfer anxiety.

The amount of information provided to family members by self-report in this study was greater than that provided to family members in the Leith (1998) study. This can be partially explained because of the structured information intervention but the amount of information provided through family member self-report was also greater in the control group as compared to the Leith study. It is possible the family members may have identified more information through self-report simply because they were enrolled in the study prior to patient transfer and wished to please the nurse research assistants by positively reporting information received. It is also possible the practices surrounding patient transfer by the ICU nurses differed in this study compared with the practice of nurses at the time of the Leith (1998) study. Further analysis of the differing populations would need to be conducted before concluding the reason for increased self-report of information and to conclusively determine the relationship between amount of information provided and family member anxiety and transfer anxiety.

The Schwartz and Brenner (1979) study identified lower scores in patient stress as reported by patient, family and nurse in the group that included provision of information to family members about patient transfer as compared to the group that did not receive this

intervention. Bokinskie (1992) identified family members that experienced care conferences prior to patient transfer from ICU had significant reductions in their anxiety. This study appears to support the positive effect of information through reduction in family member anxiety of through the time of transfer (transition) to the current measure (acceptance).

Relationship between family member anxiety and location on receiving unit

This study identified a statistically significant difference at $p = < .05$ for mean GARS scores at all three measures (baseline, time of transfer and current time) when comparing general in-patient unit to SDU. The SDU patient population continues to experience constant observation by the registered nurse and has a nurse to patient ratio of 1:2. The change in environment is not as great between SICU and SDU as it is between SICU and the general ward so this difference cannot be explained by change in level of care. The acuity of patients transferred to SDU is considerably higher than that of patients transferred to a general ward and may have been the influencing factor.

There are no previous studies in the literature comparing patient transfer from SICU to ward vs. SDU. It would be of interest to explore the aspect of acuity on family member anxiety. Leith (1998) compared the Simplified Acute Physiology Score II (SAPS II) as a determinant of severity of illness with the measures of anxiety and transfer anxiety and did not identify a correlation between severity of illness and anxiety. This may be explained by the timing of the SAPS II collection which occurred during the first 24 hours of ICU admission. Of greater

interest to determine the impact of severity of illness at time of transfer from ICU would be a measurement of Therapeutic Intervention Scoring System (TISS) on day of ICU transfer and correlation with measures of family anxiety and transfer anxiety at transfer and following transfer.

Relationship between transfer anxiety and ICU length of stay

Surgical ICU length of stay was collected for all 74 completed studies and converted into hours. The mean ICU length of stay in this study was 106 hours (SD 98) for the experimental and 107 hours (SD 106) for the control group. There was no correlation between SICU length of stay and family member anxiety or transfer anxiety. This was unanticipated but is consistent with the findings reported by Leith (1998).

Evaluation of anxiety assessment tools

The GARS tool was administered two separate times (at the time of recruitment to the study and the time of follow-up after the patient transfer) identifying three measures of GARS baseline, time of transfer and current time. The correlation between these three measures was significant for all groups with a Cronbach's alpha reliability coefficient score of .8072 for this study. This tool is easily and rapidly applied and can be very useful to identify family members or patients that are experiencing anxiety at any time of the patient's hospitalization. An alpha reliability analysis for repeated GARS measures was not discovered in the literature reviewed.

The PTSS provides a direct assessment of transfer anxiety for family members and is easily and quickly administered. The relationship between components of the PTSS was

significant, especially the three components that intuitively appear most relevant to the actual transfer experience. These components are *"I was happy about the transfer from intensive care", I was nervous about the transfer from intensive care (corrected score)", and "I was ready for the transfer from intensive care".* This grouping provided a reliability coefficient score of .8327 indicating an acceptable level of reliability. Leith (1998) identified an alpha reliability of .7143 if question #4 *"The intensive care unit was a frightening place"* is removed from the PTSS.

The findings for both repeated GARS measures and PTSS (limited and corrected) suggest these tools can be implemented to measure family member anxiety for subsequent studies and for clinical practice.

Anxiety after transfer from intensive care grouped by PTSS limited and corrected scores and qualitative responses

The responses received to the question *"How do you feel about the transfer from intensive care?"* were matched with the individual PTSS limited and corrected averaged scores then sorted in ascending order. A modified method of thematic content analysis was used to identify common themes and categories to the open-ended question. The averaged scores were divided into three levels to identify mild anxiety (1.0 - 2.0), moderate anxiety (2.1 - 3.0) and severe anxiety (3.1 - 5.0).

The majority (85%) of the 19 individuals who experienced mild anxiety viewed the patient transfer as positive. This group may not benefit from intervention to reduce transfer

anxiety as they do not perceive it to be negative.

The 41 respondents who experienced moderate anxiety had varying responses to the ICU transfer; the majority (54%) viewed the transfer as a positive experience and only 10% reported it negatively. Intervention to reduce transfer anxiety by focusing the family member on the patient transfer as a positive event may influence the family members that are neutral (7%) or ambivalent (29%) about the patient transfer.

The group of 13 individuals who viewed the patient transfer as neutral were placing their trust on the decisions made by the physicians and team in the SICU. These participants are unlikely to experience transfer anxiety at a significant level unless they encounter an event that causes them to mistrust the care givers.

The group of individuals that expressed ambivalence about the transfer may benefit by an intervention by the SICU nursing staff to re-focus the transfer as a positive event. The ICU nurse that provides information about the transfer experience may assist the family member to shift to a positive viewpoint as described by Saarman, 1995; Jenkins et al, 1995; Jones et al, 1994; Cutler et al 1995; Poe, 1982; Minckley et al, 1979; Dodds-Azzopardi et al, 1995; and Roberts, 1976.

Of the 13 individuals who scored in the range of severe transfer anxiety, 69% viewed the transfer as a negative event and felt the patient was not ready for it. Their concern was that their relative would not receive adequate nursing care after the transfer. These individuals would benefit from pre-transfer education, supports prior to the transfer and potential follow-up

from the ICU nurse. This group may benefit the most from a family care conference involving the ICU nurse and a ward nurse to allow the family member an opportunity to express their concerns and establish a contact with the receiving unit. Further evaluation of this as an intervention would need to be conducted to determine the benefit of family care conferencing for individuals experiencing severe transfer anxiety. Bokinskie (1992) reported the effectiveness of family care conferencing as a strategy to reduce transfer anxiety at the time of patient transfer from an ICU to general ward. In this study 50% of family members in both experimental and control groups had previous experience with an ICU. The current or subsequent experience with patient transfer from ICU may have influenced their feelings about the pending patient transfer from SICU.

Limitations of the Study

During the time of this study the SICU had significant staff shortages which resulted in bed closures. The patient population during the study period had greater patient acuities and as a result demonstrated potentially greater family member anxiety during this time. Further evidence of this point comes from the percentage of patients transferred to the SDU in this study which was 57% as compared to 40% one year earlier. The specific patient population makes generalizations of study findings difficult especially in the absence of a correlation with severity of illness.

The random assignment of family members to experimental or control group does not ensure certainty that the specified intervention information was the only information provided.

The family members self-report moderate levels of information from the SICU prior to patient transfer. The bedside nursing staff in the SICU may be sharing information with the family members that augments what the group assignment indicated. It is very possible other personal coping strategies such as social support systems have a greater impact on the family member transfer anxiety than the actual intervention. Social support systems were not assessed in this study nor could they be controlled for.

The effect size in this study was in the moderate range and not the large range anticipated in the power analysis in the research planning stage. This suggests the group size should be a minimum of 64 participants for both the experimental and control groups for further research studies.

Implications for Nursing Practice

This study identified many interesting findings that could impact ICU nursing practice. The control group experienced greater anxiety at the time of transfer compared with baseline values whereas the experimental group experienced less anxiety through the transfer. This suggests the provision of structured transfer information for family members prior to patient relocation may reduce subsequent anxiety.

The family members of patients that were transferred from SICU to SDU experienced greater levels of family anxiety at baseline, time of transfer and current time compared with those who transferred to the ward. These respondents also scored higher on the PTSS limited and corrected score suggesting that the severity of illness of their relative may influence family

member anxiety. The practicing ICU nurse could incorporate transfer teaching as an intervention for family members prior to patient transfer in an attempt to re-focus the event as a positive one and to provide some reassurance that the transfer is a sign of patient's progress and recuperation.

Family members identify the need for several components of information prior to patient transfer including: level of care on the receiving unit; patient readiness for transfer from ICU; (care giver) expectations of family members; visiting hours, policies and restrictions; nutritional requirements; level of mobility for the patient; frequency and duration of monitoring and observation of the patient by the nursing staff; physician coverage; anticipated next steps in the patient's hospitalization and recovery; and the supports available to the family members. The development of a transfer teaching tool that includes information on some of these components could be developed with representation from ICU nurses, ward nurses, multidisciplinary team members and an interested family member. This tool could be initiated in the ICU and continued following patient transfer by the receiving unit nursing staff.

The majority of family members view the patient transfer as a positive event; however early identification of family members who view the event with ambiguity, neutrality or negativity may be effective in reducing subsequent family member anxiety or transfer anxiety. This study identified the ease with which the GARS and the PTSS (modified as the corrected and limited PTSS) are administered and their reliability as a measurement tool. A simple inquiry *"How do you feel about the transfer from intensive care?"* may elicit a response

indicating risk for family member anxiety or transfer anxiety. Early detection and intervention by the ICU nurse and the continuity with the ward nurse may greatly benefit the patients and family members who are at risk for moderate to severe transfer anxiety.

Family members report a low level of information provided by the staff of the receiving unit at the time of transfer or within the first 72 hours. Early intervention through family member communication by ward nurses may reduce subsequent family member transfer anxiety, establish rapport with the family members and instill confidence regarding the nursing care practice on the receiving in-patient unit.

Family members report misinformation or lack of information prior to ICU transfer, from the receiving unit, and from patient information. Clear, accurate communication and interpersonal ability is extremely important to family members and may result in reduced anxiety or transfer anxiety if consistently observed. An anxious family member is likely to experience increased anxiety if they perceive they are misinformed or uninformed about events.

Recommendations for Further Research

Further research about family member transfer anxiety when a patient is transferred from an ICU is required. The GARS and PTSS tools are easily and quickly administered and should be used in future studies to determine family member anxiety and transfer anxiety. The corrected and limited PTSS proved to be a reliable instrument in measuring family member transfer anxiety.

An analysis of the relationship between severity of illness and family member transfer

anxiety by correlation of TISS scores on the day of ICU transfer with anxiety scores would provide additional insight into the observed difference between ward and SDU measures seen in this study.

The PTSS was administered within 72 hours of ICU transfer, the time of transition according to the Model of Back Transport (Kuhnly, 1993). A comparison of scores at actual time of patient transfer may be useful in further identifying transfer anxiety as well as validating the modified PTSS tool.

The timing of the follow-up interview may have influenced the findings especially with the group that is transferred to the SDU as these patients will frequently experience a second transfer, SDU to ward, during the 72 hours after ICU transfer. It may also indicate the provision of information could contribute to increased anxiety over time. The findings in this study relative to this question are inconclusive. It is very difficult to control for the amount of information provided to intervention groups, as was the case in this study. An analysis of the relationship between family member anxiety and transfer anxiety after patient transfer from ICU when a care conference is introduced could yield interesting results. This conference could include the ICU and ward nurse, either the ICU or ward nurse, or no conference and should be implemented when family member responses indicate severe transfer anxiety.

Further research studies on this subject should involve a minimum sample size of 64 participants for each group based on effect size between groups in this study.

Conclusion

The phenomenon of transfer anxiety among family members of patients transferred from SICU has not been well documented. Leith (1998) identified the majority of family members experience a moderate to severe level of transfer anxiety following patient transfer from ICU. The family members of a relative transferred from an ICU often display distress and frustration following the patient transfer. The provision of information to family members has been suggested as an intervention to reduce this anxiety and allow the family member to view the transition from ICU to an in-patient unit in a more positive manner.

This study was successful in partially evaluating the relationship of a structured information transfer process for family members of patients transferred from SICU to an in-patient unit on transfer anxiety. Family members that received the structured transfer information experienced a consistent decline in their anxiety scores as compared with the control group receiving the usual unstructured information.

Family members of patients transferred to SDU experienced a greater amount of transfer anxiety compared to those transferred to the ward. This is more likely to be related to the severity of illness of the patient at the time of ICU transfer than the actual environment of a SDU, since it more closely resembles that of an ICU, when compared to the environment on the ward.

Family member anxiety did not correlate with patient SICU length of stay and this hypothesis is rejected. Family member anxiety and transfer anxiety had a weak positive

correlation with the amount of information provided prior to the transfer. The amount of information provided was based on family member's self-report and may have influenced study results if they over-reported the information they received.

Implications for nursing practice and suggestions for nursing research are provided. This study does advance the current knowledge of family member transfer anxiety when a structured information transfer process is implemented. This study identifies new findings surrounding the levels of transfer anxiety when comparing SDU to ward levels of care.

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Appendix A:
Nursing Interventions to Reduce Transfer Anxiety in Patients and Family/Significant Others Following Transfer from the Critical Care Unit

	Sussman (1985)	Page et al (1995)	Jenkins et al (1995)	Schuetzman (1987)	Millet et al (1993)	Carr (1988)	Wesson (1997)	Innes et al (1994)	Cutler et al (1995)	Quinnett al (1996)	Leske (1991)	Miracle (1986)	Dunbar (1982)	Poe (1982)	Toth (1990)	Schwartz et al (1979)	Minckley et al (1979)	Bokinskie (1992)	Dodds-Azzopardi et al (1995)	Roberts (1976)
Reminiscing about events	x							x	x					x						x
Early preparation for transfer	x		x	x					x			x		x	x		x		x	x
ICU/CCU a short-term stay				x								x		x	x					x
Interpret events as ICU graduation	x		x					x	x					x			x		x	x
Remove equipment/monitors pre-transfer	x		x	x					x				x	x	x		x			x
Daytime transfer	x		x	x										x	x		x			x
Pre-transfer teaching	x		x	x			x		x			x		x	x		x		x	x
Encourage self-care	x		x					x					x	x						x
Introduce patient to unit staff	x		x	x			x		x			x		x		x	x			x
Present positive portrayal of unit staff	x								x					x						x
Include family in transfer plans	x		x	x			x			x	x			x		x		x	x	x
Post-transfer visit from ICU/CCU nurse	x		x					x									x			
Term patient/family to new unit		x												x				x	x	
Assess suitability of videorecording			x																	x
Gradually reduce monitoring/observation frequency			x	x					x				x				x		x	x
Inform patients of positive findings			x												x					x
Intensify observations post-transfer				x												x				
ICU transfer pamphlet					x			x	x										x	
Discharge planning in ICU						x								x	x					
Family care conference																		x		

Appendix B
University of Manitoba Faculty of Nursing Ethical Approval

The University of Manitoba

FACULTY OF NURSING
ETHICAL REVIEW COMMITTEE

APPROVAL FORM

Proposal Number #99/09

Proposal Title: "Relationship of a Structured Information Transfer Process for Family Members of Patients Transferred from SICU to an In-Patient Unit on Transfer Anxiety"

Name and Title of Researcher(s): Wendy Rudnick

Date of Review: March 3, 1999

APPROVED BY THE COMMITTEE: April 12, 1999

Comments: With changes and clarifications in your letter dated April 7, 1999.

Date: April 12, 1999

Barbara Naimark

Dr. Barbara Naimark, Chair

NOTE:
Any significant changes in the proposal should be reported to the Chairperson for the Ethical Review Committee's consideration, in advance of implementation of such changes.

Appendix C
Health Sciences Centre Research Impact Committee Approval

Health Sciences Centre

OFFICE OF THE DIRECTOR OF RESEARCH

820 SHERBROOK STREET
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April 19, 1999

Ms W. Rudnick
Principal Investigator
GB705

Dear Ms Rudnick:

RE: RELATIONSHIP OF A STRUCTURED INFORMATION TRANSFER PROCESS FOR FAMILY MEMBERS OF PATIENTS TRANSFERRED FROM SICU TO AN IN-PATIENT UNIT ON TRANSFER ANXIETY.

ETHICS #: N#99/09
RIC #: RI99:021

The above-named protocol, **has been evaluated and approved** by the H.S.C. Research Impact Committee.

If your study is receiving funds **and** H.S.C. Finance Division will be administering the moneys, please contact the H.S.C. Finance Department for a "Specific Purposes Account Application Form". It is imperative that you submit a copy of this letter along with your application to: Supervisor, Ancillary Services, Finance Division, so she is aware this has been approved by the H.S.C. Research Department.

PLEASE NOTE: THIS SPECIFIC RESEARCH ACCOUNT NUMBER CAN ONLY BE USED FOR THIS PARTICULAR STUDY.

My sincere best wishes for much success in your study.

Sincerely,

Luis Oppenheimer, MD, Ph.D., FRCS(C)
Director of Research
Health Sciences Centre

cc: Ms G. Dutchuk, Finance
Department Head

LO/ks

Appendix D

Relationship of a Structured Information Transfer Process for Family Members of Patients Transferred from SICU to In-Patient Unit on Transfer Anxiety

Protocol for Contact with Potential Participants

"Hello, my name is _____. I am enrolling participants in a study that examines the experience of family members after patient transfer from intensive care to a general hospital unit. The purpose of this study is to determine the impact of information for family members of patients transferred from the Surgical Intensive Care Unit (SICU) by asking questions after the transfer. This study will be helpful in determining what information to provide to family members of ICU patients. I would like to invite you to participate in the study. It should take about 30 minutes of your time and involves an interview with the nursing researcher after your family member has been transferred to the in-patient unit. Would you like to participate in the study?

No: "Thank you for your time"

Yes: "Thank you very much for agreeing to participate. This paper provides a description of the research study. Wendy Rudnick, the nurse researcher, will contact you after your family member has been transferred from ICU to arrange a time for an interview. You may contact her if you have further questions on this study".

"I would like to ask you about your level of anxiety at this time and a comparison will be made by the nurse researcher after the patient transfer from Surgical ICU". [Administer the General Anxiety Rating Scale (GARS) (Appendix H)].

Anxiety is defined as a feeling of apprehension or tension for a reason that is not easily identified.

Appendix E

Relationship of a Structured Information Transfer Process for Family Members of Patients Transferred from SICU to In-Patient Unit on Transfer Anxiety

Family Member Consent to Participate

You are invited to participate in a research thesis study about family members experience with transfer from intensive care. The research study will be conducted by Wendy Rudnick, a Master's of Nursing student at The University of Manitoba under the guidance of her thesis committee members: Dr. Erna Schilder, Mrs. Carol Ringer, and Dr. Tuula Heinonen. The goal of this study is to identify what information you have received about the transfer of your family member from intensive care and how you feel about the transfer from intensive care. The study has been approved by the Ethical Review Committee of the Faculty of Nursing at The University of Manitoba (pending)and the Health Sciences Centre Research Impact Committee (pending).

Participation in this study is voluntary and you are under no obligation to participate. The care of your family member will not be affected by your decision to participate or not to participate. You may refuse to answer any questions or withdraw from the study at any time.

The study involves an interview that includes some general background information, questions about the transfer from intensive care, and three short written questions about your feelings after transfer from intensive care. The survey will be completed only once and should take less than 30 minutes of your time.

The information that you provide will be kept confidential. All participants in the study will remain anonymous. Only the researcher, Wendy Rudnick, and thesis advisor, Dr. Erna Schilder, will have access to the data. All information will be identified by a code number and not your name. Group responses only and not individual results will be reported. The study results will be kept in a secure place for a period of seven to ten years and then destroyed.

There may be no direct benefit to you or your family member personally, but participation in the study may provide information to help other people when their family member is transferred from intensive care. The study results may be used for publication in a journal article.

If you have any additional questions you may contact Wendy Rudnick at 488-4785 or Dr. Erna Schilder at 474-8218. You can receive a summary copy of the results upon request once available.

Relationship of a Structured Information Transfer Process for Family Members of Patients Transferred from SICU to In-Patient Unit on Transfer Anxiety

Participant Name :_____

Participant Signature: _____

Participant Phone Number: _____

Witness Name: _____

Witness Signature: _____

Date:_____

Patient Name: _____

Patient Birth Date: _____

Patient Hospital Identification #: _____

Copy of summary results? Yes _____ No _____

Appendix F

Relationship of a Structured Information Transfer Process for Family Members of Patients Transferred from SICU to In-Patient Unit on Transfer Anxiety

Family Member Questionnaire

Demographics:

what year were you born?_____ [age _____]

gender _____male _____female

relationship to patient

_____ spouse_____ parent_____ child _____other (name)_____

occupation: _____

highest level of education completed:

< high school _____ high school _____ community college _____

university _____ university graduate _____ post-graduate studies _____

Have you or your family member been a patient in ICU before?

_____ Yes _____ No

1. How many hours in advance were you told that your family member would be transferred from SICU?

_____ < 1 hour _____ 1-6 hours _____ > 6 hours _____ informed after transfer

2. Were you given the opportunity to ask questions about the transfer from ICU? _____ Yes _____ No

3. Did you receive any of the following information before your family member was transferred from ICU?

_____ description of your family members current health status

_____ reason for the transfer of your family member from SICU

_____ time and date when ICU transfer was to occur

_____ description of the new unit

_____ description of nursing care on new unit

_____ other: _____

4. Were you present at the time your family member was transferred from ICU?

_____ Yes _____ No

5. Did you receive any of the following information after your family member arrived on the new unit?

_____ how to contact the nursing station

_____ description of new unit

_____ description of nursing care on new unit

_____ description of visiting hour policy on new unit

_____ other : _____

6. **How did you feel about the transfer of your family member from intensive care?**

7. **What was positive or helpful about the transfer from intensive care unit?**

8. **What was negative or unhelpful about the transfer from intensive care?**

Other comments:

Appendix G

Relationship of a Structured Information Transfer Process for Family Members of Patients Transferred from SICU to In-Patient Unit on Transfer Anxiety

Usual Unstructured Information

(Inform Family)

"We anticipate your family member will be transferred from the SICU to an in-patient unit (ward) within the next 24 - 48 hours as they have progressed to a point where ICU care is no longer required."

"Do you have any questions at this time?"

Please list any questions asked

_____

_____

_____

_____

_____

_____

_____

_____

_____

Appendix H

Relationship of a Structured Information Transfer Process for Family Members of Patients Transferred from SICU to In-Patient Unit on Transfer Anxiety

Structured Information

(Notify)

"We anticipate your family member is being transferred from the SICU to an in-patient unit (ward) within the next 24 - 48 hours as they have progressed to a point where ICU care is no longer needed".

(Environment)

"The in-patient unit is located on _____. Your family member (patient's name) will continue to be monitored for (pneumonia, signs of infection, recovery of injuries, blood pressure, fluid balance, other) by the nurses and doctors. Dr. _____ (admitting physician) will continue to be involved in your family members' care. Your family member may not be under constant observation by a Registered Nurse as the RN will likely have five other patients to monitor. The RN will adjust the time he/she spends with each patient individually."

"Most of the rooms are semi-private (2 patients) with a patient bathroom in each room. The RN will look in on the patient hourly or more frequently if needed. The patient has a call bell that will summon assistance from the nursing staff. It may be a nursing assistant that answers the call bell and he/she will provide assistance if able or get the RN if required (e.g.. pain medication)".

(Expectation of Increased Self-Care)

"The patient will be assisted and encouraged to participate in their own care to progress toward increased independence. The family members are encouraged to participate with the patient so that you can learn the extent of the patients' abilities and see the progress first hand".

(Feelings)

"The patient or family members may feel uncomfortable at first with the move from the SICU. The feeling is normal and may continue until you feel familiar with the new environment and routines".

(Support)

"The in-patient unit staff can help with the adjustment you may experience or provide support for you if you would like to speak with someone (Social Work, Psychiatric Liaison Nurse, Chaplain, etc.)".

"Do you have any questions at this time?"

(Please list questions asked)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

"Would you like to see the unit that your family member will likely be transferred to?"

Yes _____No _____

Appendix I

Relationship of a Structured Information Transfer Process for Family Members of Patients Transferred from SICU to In-Patient Unit on Transfer Anxiety

Place a mark on the line that indicates your current level of anxiety

[A] Baseline Graphical Anxiety Rating Scales

Not Anxious — As Anxious As I Could Be

Appendix J

Relationship of a Structured Information Transfer Process for Family Members of Patients Transferred from SICU to In-Patient Unit on Transfer Anxiety

Graphical Anxiety Rating Scales

Place a mark on the line below that indicates your level of anxiety at the

[B] Time of Transfer from Intensive Care

Not Anxious — As Anxious As I Could Be

Appendix K

Relationship of a Structured Information Transfer Process for Family Members of Patients Transferred from SICU to In-Patient Unit on Transfer Anxiety

Graphical Anxiety Rating Scales

Place a mark on the line that indicates your current level of anxiety

[C] Current Level of Anxiety

Not Anxious As Anxious As I Could Be

Appendix L

Relationship of a Structured Information Transfer Process for Family Members of Patients Transferred from SICU to In-Patient Unit on Transfer Anxiety

Perception of Transfer as a Stressor

Instructions:

This questionnaire is designed to help understand how you feel about the transfer from intensive care. Read each statement and then place an X beside the most appropriate answer.

1. I was happy about the transfer from intensive care.

strongly disagree	disagree	no opinion	agree	strongly agree
5	4	3	2	1

2. The intensive care unit was a frightening place.

strongly disagree	disagree	no opinion	agree	strongly agree
5	4	3	2	1

3. I was nervous about the transfer from intensive care.

strongly disagree	disagree	no opinion	agree	strongly agree
5	4	3	2	1

4. I was ready for the transfer from intensive care.

strongly disagree	disagree	no opinion	agree	strongly agree
5	4	3	2	1

5. It is good to have some of the tubes, cardiac leads and monitoring equipment removed.

strongly disagree	disagree	no opinion	agree	strongly agree
5	4	3	2	1