TEACHING STRATEGIES FOR CLINICAL JUDGEMENT AND DECISION MAKING IN CLINICAL NURSING

by

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ABSTRACT

A serious concern of nursing education is teaching clinical judgement and decision making. The "loose" framework of the nursing process has been used to teach skills of decision making to nurses. However, most nurses have no formal training in problem solving. Some graduate nurses learn methods of judgement and decision making by experience and observation of role-models, but this is not often the focus for the education of nurses.

Nursing literature provides only limited descriptions about the components of clinical judgement and how to systematically make decisions about nursing actions. The fields of educational psychology and medical education were surveyed for information on the components of clinical judgement and decision making in order to identify elements of clinical judgement and decision making which might be introduced formally into programs for training nurses.

Programs to teach clinical judgement and decision making to nurses should address the following concerns: first, methods that help nurses acquire and evaluate information about what the patient's problems are, to generate hypotheses about the patient's problems and to evaluate those hypotheses; second, criteria affecting the selection of nursing actions in response to patient's problems, along with the methods necessary for nurses to implement the nursing action; third, the need to evaluate the effectiveness of methods for teaching clinical

judgement skills and decision making related to nursing actions.

The purpose of this study was to identify strategies that could be incorporated into the nursing process and into previously existing written simulation materials which were designed to teach cognitive and decision making skills. Following upon adaptation of these materials which added statements to stimulate clinical judgement and comparison of alternative nursing actions, two field trials of the adapted exercises were conducted. An existing nursing process test was adapted to test the ability of student nurses to identify nursing diagnoses accurately and to make defensible decisions about the appropriate nursing actions.

Due to an inadequate sample size stemming from restrictions imposed by thenurses' existing program, problems with the latent image materials, and less than optimal content validity of the test instrument, continued development and validation of the test instrument and further improvement and development of the simulation materials are required. A full scale experimental study should be conducted to test the effectiveness of the materials in teaching judgement and decision making in nursing.

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CHAPTER ONE

Introduction

Context of the Problem

Nursing is a professional discipline, one which brings a valued service to society. That service includes two main elements: first, there is the ability to use of diagnostic reasoning skillfully in identifying health problems; second, the ability to make decisions about nursing action. Society and employers demand competence in these areas, especially in light of the changes that have occurred and are occurring in society, and in the role of the nurse in meeting the needs of that changing society. Nurses are accountable for actions taken in making decisions and "often don't realize, or take seriously, the fact that they are accountable - and liable - for everything that they do" (Grange Inquiry, 1985, p. 22).

Nurses make decisions when a patient is diagnosed as having a health problem and when a nursing action is chosen to deal with this problem. Accuracy of the decisions made depends upon the nurse's ability to a) identify information about the patient and about the environment, b) determine if a problem exists, c) plan and d) implement care, then, e) evaluate the results, modifying the plan if the results are not acceptable.

In her review of research on nurses' decision making, Grier (1981) discovered that nurses have difficulty in acquiring and processing information in making decisions. In particular, assessment and planning were not well done.

For several decades now, nursing education has taught decision making using the "nursing process". During that time

the focus has been on teaching the nursing process as a framework for solving problems. However, specific cognitive strategies for information processing and strategies for selecting the most appropriate actions for the care of the patient have been taught in few programmes and those are at the graduate studies level. This writer believes that the nurse's access to this information is, at best, informal and acquired by trial and error. Experience and the observation of role-models, in conjunction with previously acquired knowledge, have taught some practising nurses how to assess the patient with accuracy and how to select the most appropriate actions for the patient. However, in many diploma programmes, there is no formalized teaching of cognitive skills for problem solving and decision making. It seems plausible that this contributes to inconsistencies in the accuracy of diagnosis and patient care planning.

The "nursing process" is composed of two major stages, according to Gordon (1982): problem identification and problem solving. Problem identification is composed of assessment and nursing diagnosis. During problem identification, information is collected, judged, weighed against stored knowledge, and actual and potential problems are identified. Once the problem is identified, that is, a diagnosis is made, the focus moves to problem solving. This phase specifies desired outcomes, planning of care, implementation, and finally evaluation of the actual outcomes. Accuracy in collecting information, effectiveness in interpretating that data and accuracy in diagnosing problems is essential. Otherwise, the care which is implemented on the basis

of this information may not provide the most effective, efficient and appropriate measures to return the patient to the desired state of health.

It is this writer's belief that nurses can be taught specific strategies for collecting and interpreting information about the patient. This will help to increase the accuracy of diagnosis and statement of patient problems on which they base a plan of care. Furthermore, nurses can be taught to apply criteria to various aspects of the plan of care. This should result in a plan of nursing actions that maximizes the goals of patient care and minimizes risk to patients. In the studies reviewed by Grier (1981), only one criterion, minimization of risk to the patient, was considered.

Therefore, this thesis focuses on three concerns. First, strategies need to be identified that enable nurses to acquire and evaluate information cues, and to generate hypotheses and evaluate them. Second, criteria affecting the selection of nursing actions in response to patient problems need to be identified as well as the strategies to implement them. Third, the effectiveness of the identified strategies in improving the nurse's ability to acquire and process information for making nursing decisions needs to be evaluated.

Purpose of the Thesis

This thesis will review the literature on problem solving in nursing, cognitive skills in nursing, medical problem solving, cognitive psychology and decision making in nursing to identify strategies for acquiring and interpreting cues about a patient problem, for generating and evaluating hypotheses about

that problem, and for selecting nursing action in response to a diagnosis so that the patient centred goals are maximized and risk is minimized.

Strategies will be taught on a trial basis to student nurses using written simulations. The simulations will use a case history format and will model appropriate nursing actions in response to accurate nursing diagnosis. Evaluation of this method of instruction will look for two responses. First, there will be assessment of the development and completeness of the materials. Second, there will be informal assessment of the student nurses' responses to this method of instruction to assist them make accurate diagnoses and to select the optimal nursing actions.

The trial will be conducted in pretest-posttest control group design. The intent is to measure how well a) the test instrument works as a tool to measure components of clinical judgement and selection of nursing actions; and, b) how efficiently the written simulations are implemented. Basic to this test is the assumption that strategies teaching clinical judgement skills and comparison of alternative nursing actions can be effectively taught using written simulation as a vehicle and can be integrated into an existing curriculum without disruption.

Organization of the Thesis

This report will be presented in the following sequence: Chapter 2 reviews literature and research related to problem solving and decision making in nursing, cognitive skills in nursing, medical problem solving, clinical inference, and

strategies for problem solving in nursing. Chapter 3 describes the selection of the strategies for problem identification or nursing diagnosis, selection of nursing actions and the modification of previously developed patient simulations as the teaching mode. Chapter 4 describes testing of the instruments and the trials using the materials. Chapter 5 describes the results of the trials and the changes made subsequently to the materials.

CHAPTER TWO

Review of Relevant Literature

Problem Solving in Nursing: The Nursing Process

The nursing process is a framework that describes decision making or problem solving in the act of nursing. "The nursing process gives organization and direction to the various and distinct elements of nursing practice" according to Johnson and Davis (1975, p. 3). It is a deliberate, systematic and individualistic guide for making decisions about what to assess and diagnose, how to intervene and what to evaluate (Aspinall & Tanner, 1981; Atkinson & Murray, 1983; Gordon, 1982; Yura & Walsh, 1983).

The problems addressed by the nursing process are actual or potential patient problems that are amenable to nursing intervention (Gordon, 1982). Bower (1982) defined a problem as "an interruption in the individual's ability to meet a need, a difficulty or a perplexity that requires a solution" (p. 123). A present or actual patient problem refers to a situation existing in the here and now, something that the patient is experiencing at the moment. A potential problem refers to a problem that the patient may experience later on as a result of the current situation. By identifying potential problems, nurses may be able to prevent their occurrence or lessen their consequences (Atkinson & Murray, 1983).

Structure of the Nursing Process

The structure of the nursing process has been thoroughly described by several nursing authors, principally, Atkinson and Murray (1983), Bower (1983), Johnson and Davis (1975) and Yura

and Walsh (1983). This structure provides for the identification of, and a solution to, the patient's problem(s). The structure of the nursing process has most commonly been described as being comprised of four stages: assessment, planning, implementation, and evaluation. Assessment and planning have been divided into additional stages by some nursing authors. Not all of these authors agree on the exact nature of the structure. This lack of consensus may be due to an overlap in concepts as noted by Marriner (1975, cited in Knor, 1980).

The format for the nursing process adopted in this study is that described by Gordon (1982). This format was chosen because it separates assessment from nursing diagnosis and it delineates two distinct decision points in the nursing process: identification of the problem and solution to the problem. It consists of two phases. Phase one, problem identification, includes assessment or data collection and nursing diagnosis (diagnostic judgements and diagnostic labelling of actual and potential problems). Phase two, problem solving, includes planning care using goal statements, intervening, and evaluating the outcome of the plan.

Problem identification. The problem identification phase begins with assessment or data collection. This step is crucial since the entire care system is built upon the information gathered. Carnevali (1983) noted that assessment is an active process of observing and thinking critically while searching for data and interpreting that data. Not only does assessment occur as the initial step in the nursing process but it recurs throughout the process in the diagnostic and problem

solving phases.

Nurses use observation, interview, physical examination of the patient, diagnostic findings, and records to collect information in a systematic way (Bower, 1982; Yura & Walsh, 1983). When collecting data, nurses make judgements about the patient (Atkinson & Murray, 1983). Supposedly, the judgements are cast in terms of factual objective statements. Organization of data occurs when nurses apply a specific theoretical framework to the data, for example, human needs or stress-response. These frameworks permit nurses to assess the completeness of the data collection.

The second step in problem identification is to formulate a nursing diagnosis, a judgement or conclusion based on data that was gathered (Yura & Walsh, 1983). The nursing diagnosis made by professional nurses has been defined as "the description of actual or potential health problems which nurses by virtue of their education and experience are capable and licenced to treat" (Gordon, 1976, p. 1299). This definition of nursing diagnosis is supported by Campbell (1978), Carnevali (1984), and Shoemaker (1979). The statement of a diagnosis provides a concise, precise label for classifying a cluster of related presenting data (Bower, 1982; Carnevali, 1983). This knowledge gives a frame of reference for understanding the presenting situation and for predicting outcomes of the situation. The nursing diagnosis provides a basis for developing a logical plan for treatment (Carnevali, 1983).

The nursing diagnosis should not be mistaken for medical diagnosis. Nursing diagnosis differs from medical

diagnosis in two areas: 1) the provision of treatment and 2) the stability of the diagnosis over the period of care. The definition of nursing diagnosis in the preceding paragraph excludes health problems for which the accepted treatments are prescription drugs, surgery, radiation and any other treatments that are legally defined as the practice of medicine (Gordon, 1976). In the second instance of difference, the medical diagnosis, once confirmed, remains the same until the patient has recovered or died. The nursing diagnosis changes with alterations in the patient's health state whether those changes are related to illness or not. Thus, the nursing diagnoses for the patient are multiple and fluid reflecting the patient's changing condition from day to day (Durand & Prince, 1966).

Problem solving. The nursing diagnosis, as the end of the problem identification phase, provides a focus for the activities of the problem solving phase. Three steps exist within the problem solving phase: a) planning patient care, b) implementing the plan of actions, and c) evaluating the results of the actions against the stated goals of the plan. As they plan the care, nurses decide to help the patient in ways that solve the problems that have been identified. Planning includes four actions: 1) goals (sometimes called outcomes) are set, 2) goals are prioritized, 3) alternative actions leading to the goals are identified and 4) the most appropriate actions are selected (Shoemaker, 1979).

When planning patient care, the nurse uses the nursing diagnosis to prescribe the goals of care for the patient and to specify what changes are to be expected in the patient as a

result of the nursing action(s) (Bower, 1982). Prioritization of the goals ensures that the most critical goals are met first. Then, alternative actions to achieve the goal are considered. The most appropriate and effective actions are chosen for implementation. Bower (1982) noted that it is effective to select actions based on the criteria of positive consequences, high probability of occurrence of consequence and low risk. This method is claimed to reduce trial and error and rigid response to problems.

A written form of the plan (the nursing care plan) is prepared to provide communication between care givers about the plan of care. It provides for continuity of care. It also serves as a record against which the results of implementation may be evaluated (Atkinson & Murray, 1983; Bower, 1982; Yura & Walsh, 1983).

The second step in problem solving is to implement those nursing actions selected to provide care for the patient. Nurses use decision making skills to judge the need to modify procedures and to decide when to perform the procedures. They also make decisions to decide if consultation with or assistance from others is needed when implementing the action (Yura & Walsh, 1983). Throughout implementation nurses continue to collect data, make nursing diagnoses, and plan for care, as well as evaluate the data, diagnoses and plan of action (Yura & Walsh, 1983).

In the last step of problem solving, achievement of the goals and the plan of nursing care are evaluated. Data collected on the effect of the actions and on the patient's response to

the actions are used as evidence for evaluating whether the goal has been achieved (Atkinson & Murray, 1983). The data is also used to evaluate of the accuracy of prior judgements about diagnoses and the appropriateness of decisions about treatment (Gordon, 1982). The nursing care plan is then reassessed. Previous nursing diagnoses, goals and actions may be changed, eliminated and/or new ones may be added (Atkinson & Murray, 1983; Yura & Walsh, 1983). Yura and Walsh observed:

> Modification is incorporated in the evaluation phase and follows it, resulting in reprocessing activity, giving feedback for reassessment, and continuing the cycle of each phase. The cyclic process is continued as long as it is needed; in other words, as long as there are goals or outcomes to be achieved. (p. 198)

Decision Making in Nursing

Decision making is a key component of nursing practice. Grier (1981) noted:

> Decision making is central to nursing practice, just as it is central to any activity where states of nature are assessed. There are two salient decisions made by nurses. They make judgements about health states, and they choose interventions. How nurses make these decisions should be of major importance when one considers their complexity and the fact that most nursing activity is directly or indirectly based on these two cognitive tasks. (p. 15)

Judgements about the health state of the patient occur as nursing diagnoses are made. Choice of interventions occurs in planning and implementing the nursing actions. Nurses are told these cognitive acts occur, but they are not taught how to implement them. According to Grier, nurses have difficulty in acquiring and processing information when making decisions.

Several descriptions of the decision making process exist in nursing literature. It has been described from the

perspective of the nature of decision making, that is, deliberation and judgement resulting in choice (Schaefer, 1974). It also has been described from the perspective of three components which Bower (1982) claims make up the process: the decision, the context of the decision and the decision maker. Carnevali (1984) uses this same description in terms of diagnostic reasoning in nursing.

Decision making within the nursing process. The nature of decision making was described by Schaefer (1974) as the act of choosing following deliberation and judgement. That is, nurses deliberate on or search out the conditions calling for action in the situation. Then they make a judgement by analyzing each alternative and its consequences to determine which action would be the best one. Finally they choose one alternative as the course of action to follow. According to Schaefer, certain conditions must be fulfilled to make a decision: the freedom or authority to make the decision, rational deliberation about the alternatives on the part of the person making the decision, and voluntarity -- the act of choosing to choose an action. Once the decision is made, the course of action is defined.

Schaefer saw this decision making process and the nursing process itself as interrelated cyclic activities. Both are dynamic and involve group process. In the interrelationship, Schaefer saw deliberation and judgement corresponding to the problem identification phase of the nursing process. Deliberation corresponds specifically to assessment and data collection and judgement corresponds to the nursing diagnosis. She saw choice corresponding to the problem solving phase,

specifically with the planning step. Choice becomes reality in the implementation step and evaluation of the action also evaluates the effectiveness of the decision making process. "The purpose of decision making in an organizational setting is to achieve coordination of goals while the purpose of the nursing process is to help the client to achieve health results" (Schaefer, 1974, p. 1854). Bower (1982) also used this model of decision making in selecting alternative actions.

Model for determining specific nursing action. Bower (1982) presented a three-part conceptual model for an approach to making a decision. The model includes the context or setting in which the decision is to be made; the values, attributes, and motivation of the decision maker; and, the properties or characteristics of the decision to be made.

The context of the process includes the physical setting, equipment, clientele and agency personnel, plus all policies and procedures affecting an institution. The context influences the nature of problems to be solved and the possible decisions that solve them. Decision makers have values, biases, favoured approaches, and attitudes about problem solving, and they bring these to the decision making process. These variables influence how the nurse uses the decision making process. Finally, decision characteristics of purpose, complexity, nature of the consequence, and the ability to reach the desired goal influence the kinds of alternatives suggested by the decision maker.

The interrelatedness of the factors of context, decision maker, and decision make up a conceptual model describing an

approach to making a decision, as shown in Figure 1. Interaction among the factors is implied in the interlocking of the circles. According to Bower (1982), a conceptual model that considers these three factors encourages and influences systematic evaluation of the decision making episode. It helps nurses more accurately describe, explain and even predict the decision making process, thereby making it an appropriate model to apply to decision making in nursing.

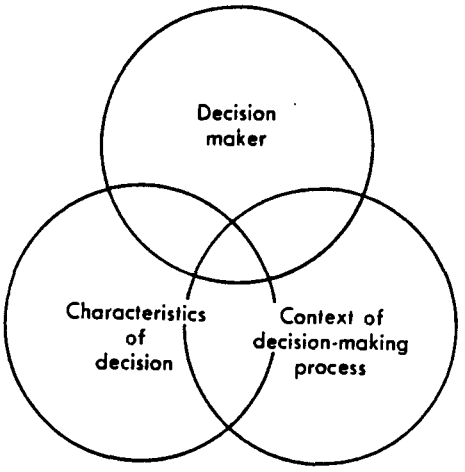


Figure 1. Conceptual model for specifying an approach to solving a problem.
From Bower (1982). Reproduced by permission.

Alternative choice analysis for decision making. When making decisions in nursing, the choice of actions and hypotheses may be facilitated by systematic analysis and evaluation of the identified hypotheses and suggested alternative actions (Bower, 1982; Bailey & Claus, 1975; Dixon, 1977; Gordon, 1982). Specific criteria for measuring the success of various actions are described by Bower (1982), as are

guidelines for the application of the criteria. Criteria provide a way to compare one alternative with another in order to select the best one. These criteria are: 1) consider the likelihood or probability of the occurrence of the consequence for each alternative action; 2) consider the value or desirability of the consequences of each alternative action; 3) consider the degree of risk of each consequence to the patient, the nurse and the agency (pp. 26-27).

Probability of occurrence of the consequence refers to how likely it is that a particular consequence will happen, that is, the predicted estimate of the consequence occurring. According to Bower (1982), the ability to predict consequences is based on knowledge and experience. Consequences are predictions of outcomes and therefore selection of action can be based on whether the consequences are what is desirable for achieving the goal of care. Risk refers to "danger or jeopardy to the patient's life, safety or wellbeing,.... also certain considerations of legality, morality and policy" (Bower, 1982, p. 28). This definition of risk was proposed by Bailey and Claus (1975) and adopted by Gordon (1982). In some instances the value of the decision may be determined by the risk, as in critical incidents, and where the benefits of a very risky action outweigh the detrimental effects. Any nursing action must take into consideration the possible risk to the agency and to the nurse, as well as the patient.

The following example in Table 1 demonstrates that consequences with high likelihood of happening and with low risk outweigh those with low likelihood, regardless of risk.

Table 1. Probability and Risk Estimates.

ACTION		CONSEQUENCE(S)	PROBABILITY OF OCCURRENCE OF CONSEQUENCE	RISK
Administer codeine (no known history of allergic response)	*1.	alleviate pain	high	none
	2.	no nausea, vomiting	moderate	low
	*3.	no coughing	high	low
	4.	allergic response occurs	low	low

* desired consequences having high likelihood of occurrence of consequence and low risk.

Although the individual in the example might experience undesirable consequences, that chance is low and the action is considered acceptable because it will very likely produce the desired outcome with low risk attached.

Estimates of probability of the consequence occurring may be made objectively or subjectively. For example, objective estimates are made from a systematic recording of the frequency with which the consequences of the action occur. Subjective estimates are made based on a nurse's own memory of the frequency of an occurrence as reported by other nurses or from personal experience (Bower, 1982). Many factors can impinge upon the nurse's subjective estimate, for example, emotions and recency of particular experiences. Thus, probability estimates are educated guesses of what might happen. The estimates are only one way of determining the value and risk of a proposed action. An example of how the desirability of a consequence is determined when there is more than one action from which to

choose is shown in Table 2.

When making the decision among the alternatives following the application of criteria, Bower (1982) suggested three guidelines that might be helpful:

> 1. Select the alternative that results in as many desirable consequences as possible,
> 2. Select the alternative that best meets the desired goal but minimizes the risk, and
> 3. When faced with a decision between risk for the patient or risk to an agency, the nurse, or another health team member, first consideration goes to the client. (p. 161)

Analysis of alternative actions in this systematic way provides the nurse with one means for making defensible nursing decisions. Generating alternatives and their consequences before implementing actions has the advantage of calling attention to what may occur, thereby allowing nurses to choose the most effective approach.

The process is repeated if the chosen action does not solve the problem. The remaining alternatives are re-evaluated using the same criteria as before and a second decision is made. However, Bower cautioned, though the matrix allows for the selection of the best approach, it doesn't guarantee that the best approach will be taken.

Table 2. Determination of Desirability of Consequences.

ACTIONS	CONSEQUENCE(S)	PROBABILITY of OCCURRENCE of CONSEQUENCE	RISK
1) Give morphine for pain	*1. Pain relief	high	none
	2. Slowed respirations	high	high
	3. No pain relief	low	low
2) Do not give morphine	1. No pain relief	high	high
3) Position patient and stay with him	*1. Pain relief	high	none
	2. No pain relief	questionable	moderate
	*3. Decrease anxiety, decrease pain perception	high	none
4) Call doctor for change of medication	*1. Reach doctor, get new medication order	high	none
	2. Reach doctor, do not get medication order	low	moderate

* desired consequence having high likelihood of occurrence of consequence and low risk.

From Bower (1982). Reproduced by permission.

Decision trees. Guidelines for decision making in nursing can also be found in decision analysis theory in the form of decision trees. Mathematical and analytical tools can be applied to help decision makers make the "best" choice. Decision trees, according to Fryback (1981), are flow charts showing all possible sequential "paths" representing combinations of decisions and decision outcomes from the initial decision to final decisions of the set of outcomes. Decision trees aid in searching for cues and evaluating evidence in the diagnostic process.

The decision tree is useful in making a nursing diagnosis, Fryback claimed, because it provides a diagram that shows the interrelationships of the many pieces of the problem. The tree is a branching diagram. The left most point is the starting point (the root) from which branches grow. This point represents the present decision. Each branch represents "a decision alternative, or an event that might occur or influence the outcome of choosing a particular decision alternative" (Fryback, 1981, p. 350). A path through the tree represents combinations of decisions or observation contingencies.

The construction of the tree must meet two criteria, noted Fryback. First, the branches must represent mutually exclusive possibilities. Only one can occur, and the set of brnches will exhaust the set of possibilities. Secondly, the left-to-right ordering of the events in the tree must faithfully represent the order in which information becomes available to the person making the decision and the order in which decisions must be made.

Woods (1984) noted that the decision tree can be used in nursing to represent the problems of decision making under risk. She claimed that it is usual to have the first branches of the tree represent possible actions, and the subsequent branches possible results that depend on states of nature, as seen in Figure 2.

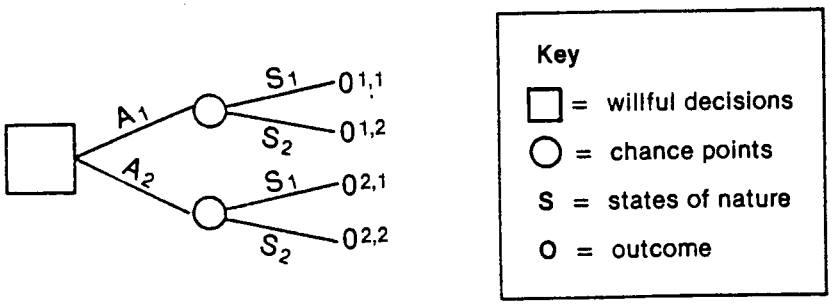


Figure 2. Decision Tree Representation. Adapted from Woods (1984). Reproduced by permission.

The decision tree should represent the major concerns of the decision maker, but it should also be simple so that the decision-maker isn't overwhelmed.

The use of a decision tree provides some advantages for making decisions (Fryback, 1981). First, it assumes that decision makers wish to maximize some measure of overall preference for the outcomes of the decisions. Second, use of the tree recognizes that people are limited in handling large amounts of information in relation to complex situations at any one time. To make these advantages effective, the tree can be used to break complex decisions into smaller, more easily absorbed decisions that the person making the decision can

handle. Fryback notes that mathematical models are then used to put all the pieces together to solve the larger, more complex problem.

Aspinall and Tanner (1981) provided an analysis of how each of four nurses approached the care of a hypothesized patient. They noted that there were several potential problem areas in the diagnostic process: 1) failure to associate initially available data with plausible diagnostic hypotheses, 2) failure to include the accurate diagnosis in the initial set of hypotheses considered, 3) overestimating the probability of one hypothesis because of greater ease of recall, recent experience, for example, 4) failure to use disconfirming data, and 5) overestimating the reliability of the data or the information value in either confirming or disconfirming hypotheses.

Aspinall and Tanner (1981) claimed that using a systematic approach such as a decision tree would assist the decision maker to avoid the listed traps. They prepared a decision tree that demonstrated the testing of the observed data against hypothesized diagnoses. It was constructed from information on specific diseases or health problems. This form of the decision tree has the advantage that students can be assisted to consider multiple alternatives in each step. Students can also be helped in the storage and retrieval of information held in memory if the information is organized around major cues indicative of health problems.

The inital stages of the diagnostic process -- attending to initial data and generating all of the possible diagnostic

hypotheses -- are crucial to the remainder of the nursing process. The hypotheses guide the rest of the data gathering and if not complete, relevant data will be missed because the appropriate diagnostic hypothesis is not available for consideration. Thus a complete hypothesis generation will ensure a thorough collection of data leading to an accurate diagnosis, claim Aspinall and Tanner (1981).

Similar action in gathering complete information about the patient with systematic testing of each hypothesis and recognizing that certain cues may be undependable leads to accuracy in the formulation of the nursing diagnosis. Aspinall and Tanner (1981) state that nurses have a habit of relying on recency of experience for support for certain hypotheses as the diagnosis as well as considering only the cues that confirm the presence of the hypothesis. Complete and systematic hypothesis testing ensures that the nurse looks at all data when assessing the hypotheses and avoids being narrow visioned, making errors when not all the possibilities are evaluated.

Aspinall (1981) and Woods (1984) described how the diagnostic search tree is used. Nurses and clinicians proceed systematically to generate hypotheses after attending to available cues. Then they rank the hypotheses in order of importance and obtain additional data to help confirm or disconfirm the hypotheses. They continue in this manner until rejection of all hypotheses that can be rejected has occurred and those that are strongly confirmed now remain. As this search goes on, the set of probabilities of the diagnosis constantly alters, so eventually the probability of one diagnosis

approaches 1.00 and the diagnosis is reached. Grier (1976), in a study on decision making in nursing, found that "over half the decisions made by participating nurses fit a model of decision making" (p. 79) and as such, she claimed it provided evidence that decision theory is an example of a mathematical model that is applicable to the selection of nursing action.

Cognitive Skills in Nursing

In modern views of nursing, the traditional skills of perception and action are combined with those of cognition. Yura and Walsh (1983, p. 132) used several terms to describe cognitive skills in nursing: problem solving, decision making, reasoning, making judgements, inference making and critical thinking. Doona (1976) noted that trial-and-error nursing care is being replaced with interventions that can be subjected to theoretical evaluation. The interventions then can be modified by the conclusions of that evaluation. However, research to date has done little to identify what the cognitive skills are that nurses use, how nurses use those skills when giving patient care, and, finally, what instructional methods can best teach nurses to use the cognitive skills effectively.

Clinical inferences in nursing.

An early attempt to study the cognitive abilities of the nurse was made in a series of studies conducted by Hammond, Kelly, Schneider, and Vancini (1966a, 1966b, 1967) and Hammond, Kelly, Castellan, Schneider, and Vancini (1966). These researchers investigated the process of making clinical inferences with specific reference to the field of nursing. Until that time, the cognitive or inferential process of the nurse had not been evaluated.

Hammond and his colleagues intended "to gain an understanding of the way a nurse selects, assembles, and uses signs and symptoms and any other information in reaching a decision about the state or condition of the patient" (Kelly, 1964, p. 314). They suggested that, with this understanding, educators would be able to teach students decision making skills more effectively. Kelly noted that this study was to include the possibility of increasing understanding of inference making under conditions of uncertainty. Specifically, the investigation focused on a) the nature of the cognitive task and its' characteristics, b) the informational value of the various cues as they were used by nurses, c) the use of information seeking strategies by nurses, and, d) how nurses revise their judgements.

Overall, the study found that a) cues are many and varied, b) no single cue gives more than a trivial amount of information, c) nurses do not consistently use strategies for searching for relevant information, and, d) nurses do use an internally consistent revision model but are cautious in their judgement. The study on the inferential process of the nurse did not achieve all it set out to do. However, it did clarify some concepts about the nurse's inferential system and showed what the nurse does not use.

Hammond and his colleagues were unable to identify what inferences are made by nurses, or how nurses choose and use the information available for making the inference. However, Kelly (1966) states that there is information available on certain features that characterize the inferential situation involving

the nurse and the patient. These features are "1) inferences made by nurses have social value, 2) inferences made by nurses are based on incomplete and probabilistic data, 3) inferences made by nurses are followed by immediate action, 4) the inferential task is complex" (Kelly, 1966, p. 24). The nature of the cognitive task and of its characteristics were not determined and still require examination and research.

Three studies in nursing focused on cognitive skills in nursing. Aspinall (1976) studied how well the nurse uses cognitive skills, Gordon (1973, 1980) focused on information seeking strategies used by nurses, and Matthews and Gaul (1979) looked at the relationship between critical thinking abilities and performance on components of clinical judgement.

Information processing during nursing diagnosis.

Matthews and Gaul (1979) attempted to find out if a relationship existed between specified variables related to the nurses' cognitive ability to process information during the diagnostic process. They looked at the relationship between concept categorization and cue perception when nurses make nursing diagnoses. They also looked for a relationship between critical thinking and the nurses' ability to come up with a nursing diagnosis. The findings showed no relationship between nursing diagnosis and critical thinking for either the baccalaureate nurse (BSN) student group or the graduate nurse (MSN) student group tested. However, Matthews and Gaul claimed that there was a significant relationship between cue perception and concept categorization for the BSN students while there was no significant relationship between the variables for the MSN

students. This might be due, they stated, to differences in cue processing strategies, a result of the informational value of the cue to the individual rather than the number of cues utilized. MSN students also tended to use negatively confirming cues, that is, cues that are present only when specific problems do not exist in the patient (Matthews & Gaul, 1979). The finding on the informational value of the cue is inconsistent with the findings of Hammond, Kelly, Schneider, and Vancini (1966b).

Matthews and Gaul noted that the low accuracy (56% average) in making nursing diagnosis was probably due to four factors. First, the test instrument was not a standardized measure. Second, the nurses tended to choose a less effective strategy for diagnosis when cognitive strain was high. Third, a lack of relationship existed between cues representative of nursing diagnoses. Fourth, there were differences in the degree of difficulty in the material for testing the students.

Overall, Matthews and Gaul argued that the ability to derive nursing diagnosis depends upon identifying discriminating cues for each diagnosis. Once these cues are identified, they can be used to teach the diagnostic task to the nurse, a component that nurse researchers and educators should focus on more (Matthews & Gaul, 1979).

Strategies used in making nursing diagnosis. Gordon (1973, 1980) examined the strategies used by nurses to select or eliminate hypotheses in the process of making nursing diagnosis. She expected that experienced nurse clinicians would use a procedure combining multiple and single hypothesis testing.

Hypothesis testing is a strategy that is used to limit

the number of hypotheses being considered to a manageable set; that is, within the limits of working memory. Two strategies were studied by Gordon: multiple hypothesis testing, including predictive hypothesis testing, and single hypothesis testing. Multiple hypothesis testing involves the testing of two or more hypotheses simultaneously against a cue or cluster of cues. Single hypothesis testing results in testing one hypothesis at a time, discarding the hypothesis if it is not confirmed by cues. Predictive hypothesis testing is a form of multiple hypothesis testing where hypotheses are tested against contextual cues about the patient or the environment, for example, age, sex, disease, to narrow down the possible hypotheses. The testing yields predictions about potential patient problems which might occur as a result of those cues.

Gordon (1973) showed that this sample of graduate MSN students used a mixed set of hypothesis testing strategies to arrive at a nursing diagnosis. Initially, the subjects used a multiple hypothesis testing strategy that included predictive hypothesis testing. Later, the subjects switched to single hypothesis testing strategy whether access to information was limited or not. She also showed that the nurses' inferential ability had no effect on the accuracy or confidence in deciding on a nursing diagnosis. Diagnostic accuracy and confidence in diagnostic attainment were not greater when access to information was unlimited.

A follow-up of this study (Gordon, 1980) demonstrated that predictive hypothesis testing was used more frequently by nurses at the beginning of the diagnostic task than later on. As

a result, Gordon claimed that relationships between theory and statistics should be emphasized in the teaching of nursing. Nurses would then develop the networks of propositional inferences for memory recall when testing hypotheses. According to Gordon, the ability to use inferential reasoning and strategies to increase diagnostic accuracy needs further study. She also noted that if there are procedures that exist within the strategies that are generally associated with accurate diagnosis making, it is important to make sure that they are learned. However, Gordon stated that the generalization of the results could not be made because of the lack of stratification of sampling design, limitation of the task to anticipatory diagnosis, and the information conditions studied.

Nurses' diagnostic ability. Aspinall (1976) examined the expertise of nurses in identifying the possible causes of the changes in behaviour which are observed in the patient. She noted "not one subject identified all of the possible causes of changes observed in the patient" (p. 435). However, she noted that nurses who had advanced education and/or less than ten years experience in nursing correctly identified more problems than did those with less education and/or more than ten years nursing experience. Aspinall claimed that the analysis of the results indicates that most of the nurses in the study apparently had deficits in two areas. The first deficit was in theoretical knowledge of problems that could be responsible for physical or psychological problems. The second deficit was absence of a strategy that would enable them to evaluate the cues described in the case study and to focus on the pertinent

problems. This deficiency may occur as a result of not retaining theoretical knowledge previously learned or of not knowing how to apply the knowledge to solving the problems in nursing action (Aspinall, 1976). Aspinall argued that to be able to intervene effectively in patient problems requires accuracy of nursing diagnosis, thus the skill of diagnosis must be learned.

These three studies identified weaknesses in the knowledge base and in the teaching of strategies for decision making. The comparative chart in Table 3 shows that the studies have only been partially successful in identifying the kinds of cognitive skills needed for nursing decision making. It also shows a lack of consistency of language between the authors and a lack in focus on desired and necessary skills.

Table 3. Comparison of Three Studies in Cognitive Skills in Nursing

AUTHOR	POPULATION STUDIED	PURPOSE	FINDINGS	APPLICATION TO CURRENT STUDY
Gordon (1973, 1980)	60 graduate program nurses (M.S.N.) non-random	Study and follow-up to identify the hypothesis-testing strategies used by nurses when deriving a nursing diagnosis.	A mixture of hypothesis-testing strategies were used when deriving a nursing diagnosis: diagnostic accuracy and confidence in diagnosis were not affected if available information was limited or unlimited, or by high or low inferential ability.	Increases in diagnostic accuracy can be enhanced if consideration is given to the way nurses process information, store it for retrieval, as well as to teach inferential reasoning and strategies for hypothesis testing.
Aspinall (1976)	187 hospital nurses, variety of educational & occupational backgrounds.	Study of nurses ability to identify possible causes for changes in behaviour in the patient.	Little overall ability to identify the possible causes of abnormal behaviour was observed, and is thought due to (a) lack of knowledge (adequate theoretical), and, (b) lack of a strategy assisting the nurses to evaluate cues and to focus in on the problem.	Specific teaching of strategies to focus on analysis of the meaning of observations made will direct the nurse to make all possible interpretations about the cause of abnormal cues before centering in on one cause and taking action; all nursing diagnoses are identified, no cues go unexplained and the pt. receives complete care.
Matthews and Gaul (1979)	B.S.N. & M.S.N. nursing students	Study to identify the cognitive variables necessary in the processing of information during the diagnostic task.	No difference was found between B.S.N. students and M.S.N. students in the ability to think critically; B.S.N. students seem more accurate in diagnostic ability, possibly due to differing cue processing strategies.	Models of diagnostic judgement should include the discriminating cue that exist for each nursing diagnosis, students judgement may be checked against the model, reinforced if correct, and changed if incorrect.

Summary

Nursing literature and research into problem solving and decision making in nursing is in a fledgling state with one exception: the nursing process. As a deliberate and systematic framework within which the nurse acts to provide quality patient care, the nursing process is well and clearly described in nursing literature. This framework can guide the nurse's decisions about what to assess and what to diagnose, what to plan and to what end, how to intervene and what to evaluate through the structural components of the nursing process.

In the nursing process, problem identification results in a judgement about the health state of the patient. Problem solving results in a judgement about what nursing actions are appropriate for the care of the patient. Judgement is closely allied to decision making and problem solving. As a result, the nursing process can be used as a framework for teaching decision making.

Research and literature describing the cognitive skills and decision making strategies of nurses is limited particularly for the novice or student nurse. Decision making was demonstrated by Schaefer (1974) to correspond to the steps of the nursing process. Bower (1982) went further and outlined the components of decision making. She also described a decision rule to guide decision making in relation to selection of actions; "Actions whose consequences have the highest probability of occurring and whose overall values are the highest for the desired effect -- yet create the least risk to the client, nurse, or agency -- take precedence over any others"

(p. 29). Though neither of these authors described the cognitive skills involved in making decisions, the nurse educator can draw on these two models to develop strategies for decision making within the nursing process.

Mathematical models can be applied to the selection of nursing actions. However, such models fail to consider the lack of independence of the data. This renders them ineffective and inefficient, according to Elstein (1976) and Woods (1984). However, of the decision models, the decision tree can provide a format for directing cognitive activity leading to solving the diagnostic problem.

Decision making in nursing is a complex, probabilistic and often uncertain condition. Knowledge about the factors affecting nursing care is often incomplete (Hammond, Kelly, Schneider, and Vancini, 1966a, 1966b, 1967; Hammond, Kelly, Castellan, Schneider, and Vancini, 1966). Findings by these authors demonstrate the probabilistic nature of nursing and the complex, nondiscriminating and inconclusive data base upon which judgements are routinely made. Nurse educators need to take the uncertain nature of the data into account when teaching students stategies on diagnostic reasoning and decision making.

A few nurse researchers have recently attempted to define the cognitive skills used in nursing. Gordon (1973, 1980) defined the types of hypothesis testing strategies used by expert nurses as well as conditions which increase accuracy in making diagnoses. She also noted that the provision of limited access to information increased the experts' use of cognitive strategies to efficiently select and process information. This

finding is supported by Carnevali (1984) and Tanner (1984). Adequacy of theoretical knowledge and the ability to use critical thinking skills has been cited by Aspinall (1976) and Gordon (1980) as necessary to correctly assign cues to diagnostic categories and to focus on the pertinent problems. This is supported by Carnevali (1983, 1984) and Tanner (1984). Aspinall (1976) and Matthews and Gaul (1979) claimed that these two essentials are deficient in a substantial proportion of the practising nurses that they studied. However, not all cognitive skills have been identified, and none of the studies describe how the identified skills can best be used for problem solving. This deficiency emphasizes the need to discover a method of teaching strategies on diagnostic reasoning and decision making. Nurse educators need to devise teaching methods that provide adequate theory and that stimulate the ability to use critical thinking skills.

Because of the sparse nature of early nursing education research, it is necessary to turn to the fields of medical problem solving and cognitive psychology. Though nurses do not make medical diagnoses or select medical therapies, they appear to use the same cognitive and decision making skills in the process of nursing diagnosis and selection of nursing actions. Thus a literature search was made of these two fields to supplement the literature in nursing. Other educational fields -- general and military -- have drawn on the research in these two fields to develop their curricula to teach problem solving.

Problem Solving in Related Fields

Information processing and inference making are now

accepted as the processes by which problem solving in nursing is achieved. However, the lack of research on cognitive skills in nursing has resulted in relying on the medical and psychological fields for supporting literature and research. A major contributor to the understanding of cognitive skills in the medical field has been the work of Elstein, Shulman, and Sprafka (1978).

Medical Problem Solving

A major study into the reasoning abilities of experienced physicians was undertaken by Elstein et al. (1978). The purpose was to measure the skill of problem solving and reasoning in the physician. During the study, Elstein et al. noted that all physicians used the same process when problem solving for a patient diagnosis. That is, all physicians used the cognitive operations described in their model of medical enquiry. These operations are cue acquisition, hypothesis generation, cue interpretation, and hypothesis evaluation.

Cue acquisition is the process of collecting data. The initial data are used to generate early diagnostic hypotheses. The clinician then gathers additional data at specific points along the way.

Early hypothesis generation, or problem formulation, establishes the dimensions of the problem space in which the search for diagnosis takes place. The problem space has been described by Simon and Newell (1971) as an internal representation of the problem or task environment. The structure of the problem space determines what cognitive activities occur and in what order they occur during the search for a solution to

a complex problem. In medical problem solving, the problem space can become enormous given the amount of data collected, the methods used to collect data and the existing knowledge in memory about health conditions, according to Elstein et al. (1978).

As the hypothesis is refined or tested by data gained in the subsequent data search, the open, ill-defined problem statement of "what is wrong with the patient" is changed into a set of closed better defined problems which then delineate an endpoint for solution. Cognitive strain associated with the ill-defined question is reduced. Thus, the data collected act to move problem solvers from the point where they are, closer to where they want to go -- the diagnosis of the patient's problem(s).

Hypotheses are generated from very few cues and are retrieved from memory primarily through an associative process and secondarily through a process of selective search for best fit to a cluster of cues (Barrows & Tamblyn, 1980; Elstein et al., 1978). Elstein et al. found that the number of hypotheses generated at any one time and held in working memory is between four and seven. This is consistent with estimates of limits in working memory capacity claimed by others (Miller, 1956; Simon, 1974). Problem solvers overcome the limitation of small numbers of hypotheses through the use of two strategies, according to Elstein et al, (1978): reformulation of the hypotheses replaces the original hypothesis with a modified form which accounts for more of the data; and, hypotheses may be nested hierarchically so that several specific hypotheses are stacked under a general

hypothesis. Thus the amount of space available to store data in long term memory is increased though the number of subspaces available for storage of the hypothesis does not exceed the limits limits of working memory (Elstein et al., 1978).

The third stage of the medical enquiry model is cue interpretation. The clinician interprets the data or cues as confirming, disconfirming or not contributing to the hypothesis. Elstein et al. found that this three point weighting scale was as effective in explaining the relationship of the data to the diagnosis as was a seven point weighting scale used to identify pathognomonic cues. How this interpretation works is not well understood, noted Elstein et al. However, it may "involve the retrieval of lists of features from memory, each being nested under a hypothesis, and then a comparison of the findings in a case with the expectancies implied by these lists" (p. 280).

The decision about the final diagnosis involves choosing among the existing diagnostic hypotheses. The choice is made through hypothesis evaluation. Elstein et al. found that two linear models were widely useful in hypothesis evaluation, though neither was appropriate in all cases. The models used most consistently were 1) choose the hypothesis with the maximum of positive cues, and 2) choose the hypothesis with the maximum difference between positive and negative cues. Elstein et al. found the use of these models increased diagnostic accuracy.

Clinical Inference

Inference is judgement under uncertainty. Clinical inference is used by the clinician when he or she goes beyond the information available to state a diagnostic hypothesis. The

content of clinical inference is statistical and therefore is probabilistic (Sarbin, Taft & Bailey, 1960). In the health care field, no one problem is based on one piece of data alone, but on the interactions or relationships of various pieces of data. This creates uncertainty because other variables such as sex, age, developmental level, and so forth can change the relationships and the importance of the data. Not only is the data probabilistic, but inconsistency within the clinician contributes to the probabilistic nature of clinical inference.

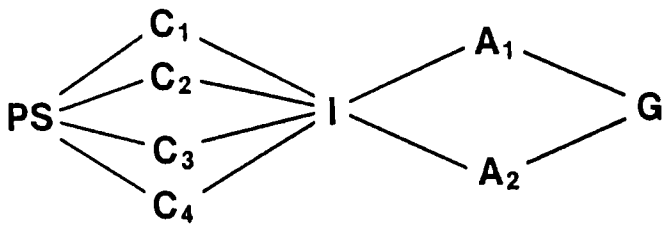
Several approaches are available from the field of cognitive psychology to aid in making judgements under conditions of uncertainty. Elstein (1976) noted that the use of such approaches can be useful in decision analysis. These approaches include Bayes' theorem, the regression equation, and the Brunswikian lens model.

Bayes' theorem provides a mathematical model for revising the probability of a diagnosis given the presence or absence of a certain piece of information (Hammond et al., 1967; Woods, 1984). Elstein (1976) claimed that Bayes' theorem is the best strategy to assist the decision maker in that it provides a rationale and the technology for combining probabilities and values to make difficult choices, and it directs attention to aspects of the situation that might otherwise be overlooked. The three point scale used to establish the relationship of cues to the diagnosis can be considered a simplified version of one way to write Bayes' theorem (Elstein et al., 1978, p. 280). In this version, Elstein et al. noted an assumption that each cue of the multiple cues has conditional independence, one from the other

-- a situation rarely existing in health care.

The use of the regression model to display a group of cues is described by Woods (1984). The regression model allows the problem solver to assess a group of cues, weigh them as to their relative importance to each of the formulated hypotheses and then to make a clinical judgement about the possibility of the hypothesis as the diagnosis. Elstein et al. (1978) stated that the three point scale used in cue interpretation is an example of the regression model because the scale considers the signs of the coefficients to be important but not the value or the amount (p. 280).

The lens model is described by Woods (1984) as a type of regression model. It was first described by Brunswik to demonstrate the relation between the person and an environment that is, in principle, uncertain and probabilistic (Elstein et al., 1978). The model shows the relationship among cues, a criterion state and a judgement. It can be used to represent accuracy of judgement, in real situations, as seen in the application to the nurse-patient situation by Woods (1984) in Figure 3.



A lens model is applied to the nurse-patient situation. PS = patient state, C_1 . . . C_4 = cues, I = inference, A_1 . . . A_2 = actions, G = goal.

Figure 3. A Lens Model is applied to the Nurse-patient Situation
From Woods (1984). Reprinted by permission.

Elstein et al. (1978) noted that the lens model equation shows how the accuracy of the judgement made is limited by the degree to which the actual criterion values correspond to the real life estimates of the criterion values.

Learning Cognitive Skills of Problem Solving and Inference Making

How to teach the cognitive skills involved in problem solving has not been well described in nursing literature and research. However, the fields of medical education and cognitive psychology have produced some information that can be drawn upon. This information does provide a basis, though somewhat shaky, which can aid in effective teaching of cognitive skills.

Multiple-cue probability learning has evolved from lens model research. Multiple-cue probability learning requires the clinical problem solver to make judgements based on the values of many cues that are probabilistically related to a criterion. Poor learning of these cognitive skills related to judgement making can occur as a result of poor cognitive control (how

individuals put into practice the skill of using their knowledge, defined by Hammond & Summers, 1972) or as a result of poor knowledge itself. However, though knowledge of the cognitive skill is independent from the skill of using the knowledge, even when full knowledge of the cognitive skill exists, judgements will not be accurate when cognitive control is poor. Thus the development of cognitive control must be learned.

Multiple-cue probability learning can be improved with appropriate feedback. Three possible forms of feedback were described by Elstein et al. (1978). Two forms are described here. Outcome feedback is used to inform the learner, after each trial, of the correctness of his judgement. Lens model feedback -- also called process or cognitive feedback -- withholds information about the results until sufficient judgements have occurred, at which time a clear model of the learner's judgements and judgement process can be seen. A visual display of the learner's model is contrasted with the ideal model. This type of feedback is important when probabilistic and nonlinear relations are being learned.

Hammond and Summers (1972) stated that cognitive feedback gives information about the relations between the cue and the criterion. That is, the feedback displays not only the correct answer but also the reason errors were made. The model of the learner's judgement process is compared with that of an expert. The expert's model includes the cognitive paths leading to the judgement. The comparison demonstrates the differences in the two models and shows where the errors occurred. The learner

can see how his or her approach to making judgements can be changed, and work to change it. The use of such feedback allows the learner to exercise sufficient cognitive control to increase overall performance of judgement without losing the understanding of the properties of the task.

The effectiveness of the two forms of feedback was studied by Elstein et al. (1978) and by Hammond (1971). Hammond (1971, cited in Hammond & Summers, 1972) noted that outcome feedback interfered with cognitive control. Hammond and Summers (1972) claimed that the learner needs to see what the properties of the complex inference tasks are, especially in instances requiring the learning of complex relationships of data under uncertain and probabilistic conditions. Visualization of these properties occurs with cognitive feedback only, according to Hammond and Summers. They also noted that decreased cognitive control is evident when outcome feedback is added to cognitive feedback, though the effect is less. This finding is not supported by the findings of Elstein et al. (1978) that outcome feedback was effective over cognitive plus outcome feedback. Elstein et al. claimed that the medical students in their study inferred the expert judgement model from the outcome feedback of physicians, thus altering their own judgement model to match. This, then, increased the medical students' cognitive control (over their judgements). Differences in experimental design likely account for the disagreement.

In a study on written simulation as a method to teach the nursing process, Knor (1980) claimed to utilize a variant of cognitive and outcome feedback. She developed a modal answer

record describing an ideal completion of written simulation exercises on the nursing process. The ideal was based on textbook information and from expert nurses. Student nurse subjects reviewed the ideal answer record at the conclusion of each exercise, comparing their answer records to those of the experts. Knor also had the student subjects view a set of alternative sequences of approaches. Since there was a strong sense that the simulations were effective in instructing the nursing process, Knor claimed that the combined feedback method had some effect on the learning process.

Relationship of Medical Problem Solving to the Nursing Process

The nursing process does not describe how problem solving occurs within its framework. It does not specify how nurses should problem solve, nor does it provide a specific problem solving method for nurses to follow. It is an "open" method that allows nurses to use whatever method they wish. Thus it does not restrict the effective problem solver and yet it provides less effective problem solvers with a useful guide to develop a plan of action (McCarthy, 1981).

However, that is not to say that no relationship exists between medical problem solving and the nursing process. Current concepts in clinical problem solving drawn from medical education and cognitive psychology can be interpreted so that they can be applied to the nursing process. McCarthy (1981) explored some of the ideas that have evolved from recent literature in these fields and has applied them to the nursing process. Aspinall and Tanner (1981), Carnevali, Mitchell, Woods and Tanner (1984) and Gordon (1980) interpreted some of the

information processing concepts and described them in diagnostic reasoning in nursing. It appears that there are two areas of similarity and one area of difference in the relationship between medical problem solving and the nursing process.

Medical problem solving is most visibly similar to the nursing process at the point of the assessment and diagnostic stages. At these stages, both the physician and the expert nurse use a similar model of problem solving which ends in the diagnosis of the patient's problem(s). The problem solving processes used by each is assumed to be similar by McCarthy (1981). The nurse processes information to make judgements about the patient's problems, and then plans actions to resolve the problems and evaluates the effectiveness of the implemented actions. The physician processes information to diagnose a medical problem and then implements a treatment plan. Fortin and Robinow (1979) maintain that the process of making a nursing diagnosis is exactly the same as the process of making a medical diagnosis. Both use enquiry and observation to gather data that can be grouped together and then analyzed so that patient problems are identified and causal relationships are established.

A second instance of similarity between medical problem solving and the nursing process exists in the cognitive activities displayed by the expert nurse and the physician involved in diagnostic problem solving. Elstein et al. found that physicians use a hypothetico-deductive method of reasoning to solve problems. That is, they produce an initial general hypothesis from initial data, then they continue to gather data,

test the hypothesis and refine, reformulate or replace the hypothesis until a specific diagnosis is reached. Deductive reasoning is used by the expert nurse who generates multiple hypotheses, then searches for data to test the hypotheses. The nurse switches to single hypothesis testing and ends the diagnostic evaluation with one diagnosis explaining all the data. However, nurse problem solvers also use inductive reasoning when making decisions about nursing diagnosis (Bower, 1982; Gordon, 1982). When applying inductive reasoning, nurses gather data until the diagnosis emerges because it is like that of a diagnosis previously made. More commonly used by less well prepared problem solvers, this method is not very effective because of the large amounts of information that may be processed in order to make a decision.

Though there are areas of similarity, there is also a difference between medical problem solving and the nursing process. It can be shown that the aims of clinical problem solving in nursing are not necessarily the same as those of clinical problem solving in medicine. Nurses have the responsibility for making judgements about the state of the patient and his or her family's daily living as it affects or is affected by their health (Carnevali, 1984). Once problems are identified, the treatment plans are developed to help the individual and the family manage the health-related activities and demands of daily living effectively given the existing circumstances. The physician solves the problem to arrive at a diagnosis and appropriate treatment while the nurse solves problems to assist the patient to achieve his maximum health

potential (McCarthy, 1981). The difference is also evident in the assessment and the diagnostic stages. The physician focuses on the medical diagnosis while the nurse focuses on an exploration of the problems that arise from the medical diagnosis, treatment and prognosis as well as the psycho-social components of all aspects of illness (or health).

The comparison between medical problem solving and the nursing process is summarized in Table 4. It appears that problem solving concepts from medical problem solving and cognitive psychology can be drawn upon to support and expand the "looser" nursing process.

Taken as a whole, the nursing process model seems to combine well with many of the current ideas about clinical problem solving. According to McCarthy, it seems to extend some of the diagnosis-based studies by Elstein et al. (1978) into an integrated model of how patient care might be optimally carried out. McCarthy claimed that the planning and implementation stages build a very necessary action dimension into the problem solving process. This action dimension takes clinical problem solving from an academic exercise in information processing to patient-centred, action-oriented planning.

Table 4. Comparative Relationship of Medical Problem Solving and the Nursing Process

	MEDICAL PROBLEM SOLVING	NURSING PROCESS
Comparability of Stages	4 stage model of Medical Inquiry. Information processing model for cognitive psychology. Aimed at judgements for diagnosis. Emphasis on communication process with the patient.	Problem identification phase consisting of assessment and nursing diagnosis results in judgement about patient health problems--nursing diagnosis. Problem-solving phase is action-oriented--plan of care, implementation, evaluation. Emphasis on communication process with patient.
Cognitive Activities	Use of hypothetico-deductive reasoning. Use of 4 stage model of Medical Inquiry: cue acquisition, hypothesis generation, cue interpretation and hypothesis evaluation. Multiple hypothesis testing strategies.	Use of inductive and deductive reasoning. Uses 3 of the 4 stages of Medical Inquiry model: cue acquisition, hypothesis generation, cue interpretation. Use of contextual cues. Use of mixed set of hypothesis testing strategies: multiple hypothesis testing including predictive hypothesis testing, and single hypothesis testing.
Aims of Problem-Solving Process	Medical Diagnosis, disease oriented. Determines what treatment plan is required.	Nursing diagnosis. Focuses on actual and potential problems evolving for diagnosis, treatment, prognosis. Diagnosis directs selection of actions--plan of care--help patient and family cope with problem.
Summary	Information processing model aimed at diagnosis of medical problem.	Framework for problem solving which allows use of information processing to arrive at nursing diagnosis of pt. problem--extends to action-oriented steps.

Summary

The major concepts of medical problem solving and cognitive psychology as they relate to nursing problem solving have been provided by Elstein et al. (1978) in their precise description of information processing by clinicians when making diagnoses. The description aids in understanding the cognitive processes used by expert nurses when they problem solve, and has been described by Aspinall and Tanner (1981), Carnevali, Mitchell, Woods, and Tanner (1984), and Gordon (1982). The similarity of medical inquiry to the problem identification phase of the nursing process can be used in the preparation of teaching methods, fostering judgements and decision making. The information provided by Barrows and Tamblyn (1980) and by Elstein et al. (1978) on the education of medical students in diagnosis can provide direction for the development of teaching models in nursing.

The findings of Elstein et al. (1978) on the use of a three point scale to interpret the weight of cues in relation to a particular hypothesis can be used in promoting the inferential process in the nurse. Also research done by Elstein et al. on the models for evaluating judgements can be drawn upon in evaluating the hypothesis of nursing diagnosis, and have been used in studies on cognitive skills in nursing by Gordon (1982), Bower (1982), and Woods (1984). Thus the learner can use a general rule to evaluate patient problems in light of relevant and irrelevant cues.

Barrows and Tamblyn (1980) and Elstein et al. (1978) described educational models to teach problem solving to medical

students. The literature in this field provides some direction to nursing education in the area of feedback to facilitate learning, citing the use of cognitive feedback by Elstein et al. (1978). The modelling of clinical judgements in comparison to the ideals can enhance learning of specific strategies, especially if the modelling demonstrates appropriate use of cue weighting and how cue weighting relates to nursing diagnosis.

Cognitive psychology literature stresses the effectiveness of mathematical models in judging the best actions for the patient, though these models ignore the usefulness of the decision and cannot operate unless the data is independent, a condition which is infrequent in health care. Also, most nurses are not taught decision theory, thus the mathematical models are rarely used by most nurses to assist them when making decisions. Some aspects of the models are pertinent and can be used (for example, revising the probability of the existence of a diagnosis with each piece of information received, the three point weighting scale described by Elstein et al. and the recognition of the relationship between the person and the probabilistic, uncertain environment).

Problem Solving Strategies in Nursing Education

Nursing education in college nursing programmes has not included, to date, any significant set of strategies to stimulate the development of critical thinking, judgement and decision making skills in the student nurse. Until recently, few studies existed in nursing literature that described the teaching of problem solving and decision making strategies. Aspinall and Tanner, (1983), Bower (1982), and Carnevali,

Mitchell, Woods and Tanner (1984) have now described the use of some strategies. The following is a description of two existing studies that tested the effectiveness of teaching strategies to nurses for decision making.

Case Study and Early Hypothesis Generation

Tanner (1978) undertook to study the a) relationship between components of the diagnostic process used by nursing students in the acute care setting and b) effectiveness of an instructional method developed to teach the process. The subjects were a convenience nonrandom sample of 54 senior nursing students. They were randomly assigned to one of six groups: experimental instruction, traditional instruction, and no instruction; each crossed with clinical experience or no clinical experience.

Instruction in the experimental and traditional methods consisted of patient simulations on cardiovascular nursing theory and was presented in slide tape format plus accompanying workbooks. Content for the experimental approach was organized around commonly occurring cues with discussion of relationships between the cues and several plausible diagnoses. The experimental simulations were designed so that students would identify multiple diagnostic hypotheses and test the hypotheses systematically through an information search. Content for the traditional method was based on common medical and nursing diagnostic categories with a discussion of related cues. These simulations were designed so that the students would identify only one diagnosis and define appropriate nursing management.

Two tests were used to measure eight dependent

variables. A 94-item written examination tested the achievement of the instructional unit objectives related to factual knowledge. A verbal simulation test, using five videotaped simulations, evaluated the subjects on seven dependent variables: 1) the number of early justifiable hypotheses generated, 2) the total number of justifiable hyopotheses generated, 3) the number of cues observed in the videotaped simulation, 4) the validity and dependability of the cues looked for, 5) accuracy of nursing diagnosis, 6) patient care management ability, 7) the quality of the search strategy. These seven dependent variables were independently compared to each of the other variables (Tanner, 1978, p. 26).

Analysis of the data showed a moderately low relationship existed between the variables of number of early hypotheses and diagnostic accuracy when the other variables were controlled statistically. The major determinant of diagnostic accuracy was whether or not the subject had included the correct diagnosis in the original set of hypotheses generated. Therefore, generating a large initial set of hypotheses would likely increase the probability of generating the correct diagnosis, claimed Tanner (1978). The finding by Tanner is in agreement with that found in the studies by Elstein et al. (1978).

The differences seen between the experimental and traditional instructional methods were not significant. Tanner (1978) suggested that specificity of the hypotheses and timing of hypothesis generation were in part responsible for the lack of significant difference between the two instructional methods.

Since the subjects were students, she suggested that they lacked the theoretical knowledge needed to make clear and specific statements of diagnosis. Elstein et al. (1978, cited in Tanner, 1978, p. 29) noted that experts in diagnostic skills differed from novices in that disease categories stored in long term memory were more complex and had more links between them. The crucial role played by theoretical knowledge in deriving hypotheses is supported by studies on novice and expert performance by Larkin, McDermott, Simon, and Simon (1980).

Tanner (1978) also suggested that the subjects may have been asked to generate hypotheses too early. While the information might have been enough for an expert clinician to generate hypotheses, it may not have been sufficient for novices (students) to do so. Elstein et al. (1978) noted that one of the differences between a novice and an expert is that experts generate hypotheses earlier using fewer cues (cited in Tanner, 1978, p. 29). Tanner claimed that more information provided to the novice likely would improve the ability to generate nursing diagnoses. Tanner also argued that it is necessary to continue to analyze expert nurses' diagnostic abilities and to develop instructional methods to teach the processes they use.

Use of Decision Trees

Aspinall (1979) studied the effectiveness of an instructional method that promoted the use of a decision tree. The intent was to help nurses' apply available theoretical knowledge when conducting a search for cues and evaluating evidence in the diagnostic process. Aspinall hypothesized that using a decision tree for a nursing diagnosis that included

specific behaviour would improve nurses' accuracy in recognizing all of the possible causes for the behaviour and the most likely cause for that behaviour.

The subjects were drawn from a group of hospital nurses of varied educational background who had participated in an earlier study on accuracy in identifying patients' problems based on behaviour. The nurses were assigned to thirty triads matched on the basis of education, experience, and performance on a previous study on identifying patient problems. The nurses in each triad were randomly assigned to one of three groups: two control and one experimental. Each of the three groups was given a case study and was asked to respond by listing, in order of likelihood, the possible causes of the described behaviour. Control group 1 was given the case study alone. Control group 2 was given the case study and a list of 18 disease states which could cause the behaviour in a general population of similar patients. In addition to the case study and the list of 18 disease states, the treatment group was given a decision tree for each of the 18 possible disease states so that the nurse could systematically use the information about the patient to rule in or rule out the diagnosis. Of the 18 possible diagnoses, only six were considered correct. All others were incorrect.

Overall, Aspinall concluded that the results were only suggestive of the differential effectiveness of the decision tree and that more data was needed. The following problems were noted: 1) difficulties in understanding the concepts, especially for nurses with English as a second language, 2) lack of practice with the tree appeared to interfere with its

usefulness, 3) many nurses relied on their own experience rather than following the tree in their decision making. Reliance on personal experience appeared to be a reason why some nurses profited less from the tree than did others.

Aspinall noted that nurses who didn't have the decision trees failed to identify possible causes for a patient's change in behaviour. This seemed incongruous with the expectation that these nurses give quality care (p. 185). Many of these nurses demonstrated a lack of understanding of the signs and symptoms associated with the diagnoses they listed. This may be due, claimed Aspinall, to the way in which these nurses are educated. That is, for these nurses, the educational method may not have developed in them the ability to use theoretical knowledge when making a differential diagnosis of a symptom. Aspinall argued that, as a result, further research is needed into using the decision tree to guide nurses' search for data and improving their accuracy in making diagnoses.

Instruction for Problem Solving in Nursing

Where research into problem solving in nursing does exist, it tends to concentrate on aspects of the nursing process, such as assessment (Aspinall, 1979; Curtis & Rolhert, 1972; Jeffers & Christensen, 1979; Page & Saunders, 1978) and planning (Page & Saunders, 1978). Tanner (1978) alone looked at all aspects of problem solving in nursing. Indeed, the teaching of problem solving has not produced very successful results as reported by several nursing authors.

Much of the lack of success can be laid at the door of nurse educators. Many pay lip service to organization and

strategy but fail to put them into practice when teaching student nurses, according to Mallick (1977). In a study on the effect of education on problem solving skills, Frederickson and Mayer (1977) noted that nurse educators frequently provide students with solutions to patients' problems rather than encouraging them to solve the problems. They also noted that though the research showed that baccalaureate nurse students possess greater critical thinking skills in general, there is no difference in critical thinking to solve problems between diploma nurse students and baccalaureate nurse students.

Research has also shown that teaching strategies are not significantly correlated with student performance on final evaluation (deBack, 1981, nursing diagnosis; Dubin & Taneggia, 1968, college instruction, cited in deBack, 1981). However, deBack maintained that there is a need to determine what strategies, if any, are effective for teaching the skills necessary for formulating a nursing diagnosis because nursing diagnosis is pivotal for effective professional practice.

These findings are surprising in that strategies, even when available, are either not taught or appear not to be effective. Nurse educators need to become convinced of the efficacy of strategies (Fredette & O'Connor, 1979; Mallick, 1977). Indeed, Mallick (1977) argued that teaching knowledge within the framework of the nursing process should result in students testing their understanding of the instructor's synthesis of knowledge, instead of doing the synthesizing themselves. This knowledge also includes skills to make decisions. McIntyre, McDonald, Bailey, and Claus (1972) showed

that their experimental curriculum emphasizing problem solving and decision making behaviour had some success in promoting cognitive skill acquisition, that is, gains in communication and data gathering skills increased tendencies to select actions of benefit to the care of the patient. In addition, Knor (1980) showed that written simulation had some success in teaching cognitive skills associated with the nursing process.

The use of simulations is widely accepted in nursing education and the health profession as a whole (Jeffers & Christiansen, 1979; Page & Saunders, 1978). Simulation, as an educational tool, has been described as significantly advantageous in teaching. McGuire (1976) noted several advantages:

> 1) it imitates a real situation thus allowing prediction of how well the individual or student is capable of performing in the real situation,
> 2) it allows for the situation to be predetermined and preselected and the situation can be programmed according to the students level of preparation,
> 3) all students can be faced with the same experience and can be evaluated on the same basis with clearly developed criteria,
> 4) students can make mistakes and learn from them without placing the life of a real patient in jeopardy,
> 5) feedback is prompt and unambiguous, that is, not associated with teachers and their personalities, thus enhancing learning (pp. 95-97).

Although simulation does imitate real life, this does not guarantee transfer of knowledge from the simulated situation to the real situation. Why this should be so is not known, observed Lee (1979) and McGuire (1976).

There are many types of simulations which may be used for teaching problem solving in nursing: paper-and-pencil format using latent image, opaque-overlay or tab-end techniques,

computer format, computer-managed robot simulation, and live simulation using role-playing or trained simulation patients. Knor (1980) provided a thorough discussion of simulation format.

Use of Written Simulation in Nursing. Written simulation is one form of simulation that has been used by health professionals but has not been well evaluated in nursing as an instructional tool. It was first introduced to nursing by de Tournyay in 1968 as a tool for assessing problem solving skills. Written simulations can illustrate vividly that nursing depends on decision making and can provide opportunity to draw fragmented information into a meaningful whole.

Knor (1980) studied the effects of written simulation as an instructional tool to teach the nursing process. She focussed on two issues in her study. Initially, she developed a set of written simulation exercises aimed at teaching the cognitive processes inherent in clinical problem solving and also found in the nursing process. Following that, she evaluated their effectiveness in relation to traditional classroom methods. Knor sought to determine whether written simulation plus clinical practice is better than writing nursing care plans plus clinical practice for teaching cognitive skills innate in the nursing process. The cognitive tasks were identified by Knor as "the identification of relevant and valid cues within a complex environment, attachment of proper meaning to these cues, accurate assessment of the patient's problem(s),and establishment of appropriate courses of action" (p. 61).

Knor argued that written simulation was appropriate for teaching cognitive skills because 1) clinical practice is

reflected in simulations, 2) in the simulated environment, the teacher has some control over the experience, and 3) the student can learn the skills required without causing injury to an actual patient. She claimed that, though the literature describes the benefits and advantages of written simulation, there is little available to describe and explain the cognitive skills innate in the nursing process. Despite this deficiency, she observed that she was able to derive some empirical basis from the literature of medical education and cognitive psychology for the design of the simulations.

The study was conducted in pretest-posttest control group design with a sample of 23 students. A 40-item written test instrument was used for the pretest. Subsequent to the pretest the students were divided into experimental and control groups. Subjects in the control group submitted one completed nursing care plan per week for eight weeks. The experimental group completed one written simulation exercise per week for eight weeks followed by verbal and pictorial feedback immediately after completing each exercise. At the completion of eight weeks, both groups were posttested using the same instrument as the pretest. All subjects were evaluated for improvement on three variables -- patient problem identification, cue use score, and order-of-process score -- as well as on three self-confidence variables, one for each of the response variables.

Knor designed the written simulations to teach the students how to apply the nursing process. She used a format adapted from that of McGuire et al. (1976). The format 1)

allowed the students to repeatedly practice a sequence of activities required to resolve a patient's problems, 2) engaged the students in applying cognitive tasks that are inherent in the nursing process, and, 3) provided feedback which enabled the students to evaluate their performance in each exercise (Knor, 1980, p. 60).

Pretest results showed that both groups were similar in ability on the three response variables. However, variation was seen in the confidence variables at a higher rate than was seen on the response variables. Posttest results showed lower than expected mean scores for the response variables. Interrelationships of the response variables were high indicating a relationship among the response variables.

There were substantial gains for experimental group means on all dependent variables while there was little change on control group means. However, the control group showed substantial increases on means for the self-confidence variables. According to Knor, these changes give credence to the conclusion that the simulations had a small but positive effect on learning the cognitive skills inherent in the nursing process. However, they had little effect on the self-confidence of the student in applying the nursing process on a pencil-and-paper test. She accepted that the selection of correct patient problem identification, cue use, and first action was a demonstration of the acquisition of the cognitive skills found in the nursing process.

Though the student is said to have acquired the cognitive skills, the question of which activities likely

stimulated acquisition of the various cognitive skills was not addressed by Knor. Our understanding of what the skills consist of and what kinds of strategies contribute to acquiring individual cognitive skill has not increased. However, Knor has demonstrated, though not conclusively, the usefulness of written simulation as an instructional tool in learning to apply the nursing process. As a result, the written simulation exercise method was chosen for the present research as the educational tool. The strategies of decision making would be incorporated within the simulation exercise. The simulation exercises would then be used to teach the strategies for making decisions.

Summary

The teaching of cognitive skills and strategies has only just begun to emerge in nursing literature. Strategies to stimulate early hypothesis generation in student nurses require sufficient amounts of theoretical knowledge to ensure accurate diagnosis -- a state that is not always present with student nurses (Tanner, 1978). Thus, case situations used for teaching or evaluating should present adequate amounts of information before asking students to generate hypotheses.

The use of the decision tree as a strategy to increase accuracy of diagnosis in practising nurses was tested by Aspinall (1979). It proved to be somewhat effective as long as the nurse understood the information (language) and had practice with the use of the tree. However, many expert nurses need to be convinced of the usefulness of the tree in order to use it. Since less expert nurses used the decision tree more than did the expert nurses, it seems reasonable to assume that novices

(student nurses) would benefit from the use of the decision tree as a method to discover nursing diagnoses.

According to several nurse researchers, many nurse educators are providing solutions rather than stimulating problem solving behaviours in their students. In that event, the availability of clearly effective strategies would be expected to persuade nurse educators to implement those strategies for problem solving and decision making. As well, when teaching student nurses, adjustment should be made for the level and amount of theoretical knowledge available to the student. It would also be necessary, in the early stages of the student nurses' learning, to concentrate on problem solving utilizing the knowledge that is available.

Simulation has been shown as a possible method to teach at least one aspect of problem solving in nursing, the nursing process. Knor noted that with a larger pool of subjects to test the simulation exercises, simulations likely would be proved to be effective for teaching the nursing process along with its attendant cognitive skills. Thus written simulation can be considered a profitable educational tool in which strategies for decision making may be incorporated.

CHAPTER THREE

Development of Instruction for Diagnostic and Action Decision Making

Written simulation was selected as the instructional mode in this study for four reasons: 1) written simulations provide experience of a clinical nature without the fear of harm or injury to a real patient; 2) the simulations are portable so that the student can work on them independently; 3) the student receives immediate feedback; and, 4) though written simulation is considered by many educators to be inferior to other types of simulation, it is less costly to produce.

The nursing process is an "open" method of problem solving that allows the nurse to use different methods of problem solving. The instructions for the use of the nursing process do allude to identification of relevant and valid cues within a complex environment, attach proper meaning to these cues, accurately estimate the patient's problem(s), and establish appropriate courses of action (Knor, 1980, p. 63). However, the nursing process by itself was considered an insufficient method to teach student nurses how to effectively use the cognitive skills inherent in clinical judgement and to make effective judgement about nursing actions.

Description of Knor's Simulations

Instruction of student nurses about strategies that enhance decision making skills was delivered using written simulations. The written simulation materials developed by Knor

(1980) to teach the nursing process were used as the basis for teaching. Knor's simulation materials were chosen because 1) they contained theoretical content at a suitable level for instruction in the second year of a nursing program, 2) they teach the nursing process which is useful in teaching problem solving, and, 3) the format provides natural entry points for the developed strategies of the decision flow chart and the decision matrix described under Development of Experimental Simulations later in this chapter. The written simulation exercise materials considered for this study consisted of an exercise booklet, a fact booklet and an answer booklet. A brief outline of Knor's materials will be provided here.

Exercise booklet. The simulations contain a number of sections designed to take participants through a series of exercises. These exercises have participants sequentially acquire, interpret, and use a number of cues when assessing patient problems and make decisions about nursing actions. The sections in the exercise consist of three types: introductory information, bridging sections and option sections. They will be described in the section titled Format of Simulation Exercises.

Fact booklet. The fact booklet developed by Knor contains three kinds of information. First, it contains the results of requests for information about the patient's physiological, psychological and socio-cultural circumstances. Secondly, the fact booklet contains the results of the actions chosen to resolve the identified patient problems. Finally, the fact booklet includes instructions about how to proceed after choosing an approach to the patient. The information is provided

in latent image, that is, it is invisible to the eye. The latent image process involves the paper being specially treated. The print in the specially treated area remains invisible until developed by marking it with a special pen. The information revealed provides feedback to participants about the appropriateness of the choice made.

Answer record. The answer record is a matrix developed by Knor to record all of the participants' responses and the results of the responses as participants progress through the exercise. In the answer record, participants inscribed all approaches chosen, selected cues, formulated patient problem statement(s), cue weights and relationships to problem statements, and selected nursing actions. Approaches and selected cues are listed in the "Cue" columns. Identified patient problems are written in the boxes at the top of the "Patient Problem" columns. Cue weight interpretations and nursing actions are recorded in the spaces corresponding to the appropriate cue and patient problem.

Modal answer record. The modal answer record is a compilation of the most frequent responses made by a group of nurse educators. It also demonstrates the most frequently chosen route through the nursing process. Knor considered these responses to be the set of responses that would be made by an expert nurse.

Alternative routes. During the preparation of the modal answer records, Knor noted that the nurse educators did not all proceed through the exercises in the same sequence. She considered that this was a demonstration of variablity of

experience and expertise, therefore she provided participants with examples of the routes taken by the experts so that the participants had feedback about the alternative ways that they could proceed with their solution.

Format of Knor's Simulation Exercises

As noted earlier, there are three types of sections to the simulation format: introductory information, bridging sections and option sections. The introductory segment provides the opening scene to the exercise. It includes initial information about the situation. In a nursing situation the information is similar to that obtained about a patient during a change-of-shift report. The information provides the initial cues about the patient which are expected to stimulate participants to make appropriate decisions about what to do next. The introductory segment is followed by bridging instructions linking th introduction to the first section.

Bridging sections act just as they say; they provide a bridge from one section to another. Bridging sections direct participants to do one of two things. They direct participants to the next section, as happens following the introductory segment. Secondly, bridging sections have participants select, from a number of specific alternatives, the next approach to resolving the patient's problem. Results of the selection of an approach direct participants to the next appropriate section.

In the option sections, requests for data or actions in relation to care are provided. Participants are directed to select those activities thought to be necessary to assess the patient's problem or to initiate appropriate nursing actions.

Responses to the selected options provide feedback about the selected action or request for information. All of the responses to the options are presented in the way in which they would occur in the clinical setting.

The choices in the bridging and option sections are called items. These items are printed in visible form in an exercise booklet, while the result of the choice is printed in latent image in the answer booklet. Each section contains instructions that inform participants about the kind of response to be made in that section.

The sequence with which participants proceed through the exercise depends upon the observations and decisions made. The exercise is completed when participants reach an acceptable solution or are faced with potential harm or injury to the patient as a result of the judgements or decisions made. (Not all of the options presented are helpful to the patient.)

In the simulations developed by Knor (1980), the introductory scene provides information about a patient and his or her problems. It is followed by directions to record the information in the answer record. Bridging directions instruct participants to then proceed to Section "A". In section "A" participants are presented with several approaches leading to one of the stages of the nursing process. Instructions provide participants with information how to retrieve the response to the chosen approach, how to record the information and how to proceed after recording the information. In subsequent bridging sections, the initial instructions have participants record possible patient problems and cue interpretation weightings. The

option sections contain instructions about what responses would be expected in that section, that is, interview the patient, or, what to do with the results of the requests for information or with the results of the selected actions. Participants are then directed to proceed as directed unless given other directions in the fact booklet.

Some desirable characteristics of the presented problems are seen with these simulation exercises: the information given is not a prepared capsule of the patient but that information a nurse would find when making an assessment; the exercise presents a series of sequential interdependent decisions representing the various stages of the patient assessment; the nurse receives feedback about decisions so that future actions can be decided on; several routes to solving the problem are given with variations in the feedback given for each route; the decision made is unchangeable even if harmful or irrelevant. The nurses is forced to examine what went wrong.

Adaptation of Knor's Simulations

The exercises developed by Knor (1980) were adapted for this study with permission. Five out of the eight simulations were selected because minimal alteration would be necessary as a result of changes in practice and treatments and because of the time element in which the programme was to be conducted. The simulation materials were updated and modified for use in the proposed programme. Changes were made to the exercise booklet, the fact booklet and the answer record.

Two changes were made to the exercise booklet. Where changes in practices and treatments had occurred since the time

the materials were first developed revisions were made to the content of the case studies in the introductory and option sections and in the responses to the options. These changes were validated by two nurse educators experienced in practise and teaching. The content was compared with the content provided to meet the objectives for Nursing theory in Nursing 200 and Nursing 300 at Douglas College and was found to be consistent with the content currently taught to nursing students in Semesters Two and Three of the Douglas College Nursing Program. Secondly, the instructions in the exercise booklet and the response materials were altered to use nursing diagnosis terminology and to refer only to the answer booklet rather than both the fact booklet and the answer record.

The fact booklet was incorporated into the Answer Record to form one booklet. This change served to reduce the amount of writing necessary to complete the simulations, a problem experienced by the participants in Knor's study. Figure 4 shows how the facts were incorporated into the Answer Booklet. The printed responses were imprinted on the Answer Booklet using latent image materials as previously described under Description of Existing Simulations.

Figure 4. Example of Page One of the Fact and Answer Booklet

FACT & ANSWER BOOKLET

SIMULATION # 1

ITEM	CUES	NURSING DIAGNOSIS: Label: Actual Problem - A Potential Problem - B					
		GOAL: (State in behavioural terms)					
A1.	You find your patient resting with closed eyes.						
	Make another selection in Section A.						
A2.	Proceed to Section G. When you have finished						
	reading the Kardex RETURN to Section A and make						
	another selection.						
A3.	Proceed to Section C.						
A4.	You find your patient resting with closed eyes.						
	Make another selection in Section A.						

A disadvantage found when combining the fact booklet and the answer booklet was that the visible recording of the sequence of events no longer existed. To make up for that, the general instructions instruct participants to place a number next to the revealed response in the Answer Booklet when choosing an approach. The number would be advanced sequentially with subsequent bridging options. Thus participants would be able to compare their sequence of activities with those on the modal answer record as a part of the feedback. Another change to the Answer Record was that the goal statement is to be recorded prior to selecting the appropriate actions and is to be written in the appropriate space on the cue line and in the nursing diagnosis column. Other information to be written in the Answer Booklet included: the initial cues, the cue weights, nursing diagnosis, and chosen nursing actions. See Figure 4 for an example of page 1 of the Answer Booklet.

A second exercise booklet was developed as the experimental booklet. The booklet is the regular exercise booklet modified in two areas. Instructions were included in the bridging sections to stimulate the use of the decision tree process described by Aspinall and Tanner (1981). They also direct the use of the decision matrix and criteria for selection of actions in the option section related to nursing actions. Also, overall instructions on the use of the decision tree and decision matrix were inserted following the general instructions at the beginning of the first simulation exercise. See Figures 5 and 6.

Figure 5. Instructions for the Use of Simulation with Strategies

1. Take the EXERCISE BOOKLET and begin reading the "Introductory Information". There you will find several cues about the state of the patient. Read and follow any instructions that follow immediately after.

2. Proceed to Section A. In Section A you will find a list of several initial approaches you can take in the care of this patient. You must decide on an initial approach; the cues found in the "Introductory Information" and any hypothesized nursing diagnoses should assist you in the task.

3. When you have selected your initial approach, take the ANSWER BOOKLET and find the corresponding item. Then, using your special marker, gently rub the space adjacent to the item. Follow the instructions which appear in the space.

4. At this time use your pencil to mark 1 to the left of the first item selected in A. This begins the record of the sequence in which you work through the exercise. As you begin each new section, record the next number sequentially, eg. if you were to go to Section C from A, you would record 2 to the left of the first C item selected, etc.

5. The initial approach will lead you to subsequent sections. These later sections will contain lists of activities you might want to implement. From the lists, select those activities you think are necessary in light of what you know about the patient. The results of each of the activities that you choose will reveal further cues, or will direct you to another section of the exercise. Continue working through the exercise until you reach the statement END OF EXERCISE in either the EXERCISE BOOKLET or the ANSWER BOOKLET.

6. When you enter the section on nursing actions, you are required to use the nursing action decision matrix to aid you in selecting the most appropriate action among the possible alternatives available in that section which you consider for each goal. Use as many matrix sheets as necessary for each diagnosis and goal. Refer to the attached instructions for completion of the decision matrix.

7. Throughout the exercise a record of cues acquired, activities selected, nursing diagnoses, cue interpretation weights, and nursing actions will emerge. Instructions for recording nursing diagnoses & goals and selecting nursing actions will be provided throughout the exercise.

The sections are arranged randomly; thus you will skip back and forth as you work through the exercise.

*** * * COMMENCE EXERCISE * * ***

Figure 6. Instructions for Completing the Decision Matrix

1. Use one or more matrix sheets for each goal.

2. Record the goal in the space indicated at the top of the matrix sheet. The goal should be recorded in behavioural terms indicating the specifics which will lead to the resolution of the patient problem.

3. Select all actions listed in the section that you consider possible solutions to the patient's problem.

4. List the selected actions in the column "Alternative actions". Leave 4 - 6 lines between each action.

5. List all consequences of the action for the patient in the column "Consequences". Number each consequence. In the column immediately adjacent to the left place a "✓" or "*" beside each positive or good consequence of that action.

6. Next, calculate the probability or chance that each consequence has of occurring for that action and that patient. Use the key below:

   Probability estimate:

High	Very likely to occur
Questionable	50-50 chance to occur
Low	Highly unlikely to occur

7. Then, calculate the risk of the consequence if the action is implemented. Consider the chance of occurrence when calculating the risk. Use the key below:

   Risk estimate:

High	Threatens the patient
Moderate	Can cause serious harm
Low	Can cause some harm
None	Causes no harm

8. Finally, assess points for good consequences with high probability (1 pt. each) and low risk (1 pt. each). The action rating the greatest number of points is the most appropriate action for this patient.

9. Rank the actions according to the number of points. You may find that you include some subjective feelings in the selection.

The simulations and the modal answer records had been found by Knor (1980) to be somewhat effective for teaching the nursing process. Thus, the format developed by Knor was not changed. The validity of the existing modal answer records and the alternative routes in the nursing process used to provide cognitive and outcome feedback was taken a priori as established by Knor.

Development of Experimental Simulations

The existing simulations were altered to accommodate the decision tree and decision theory concepts considered to be necessary to teach decision making effectively. The changes will be described in relation to each stage of the nursing process where the stages were affected.

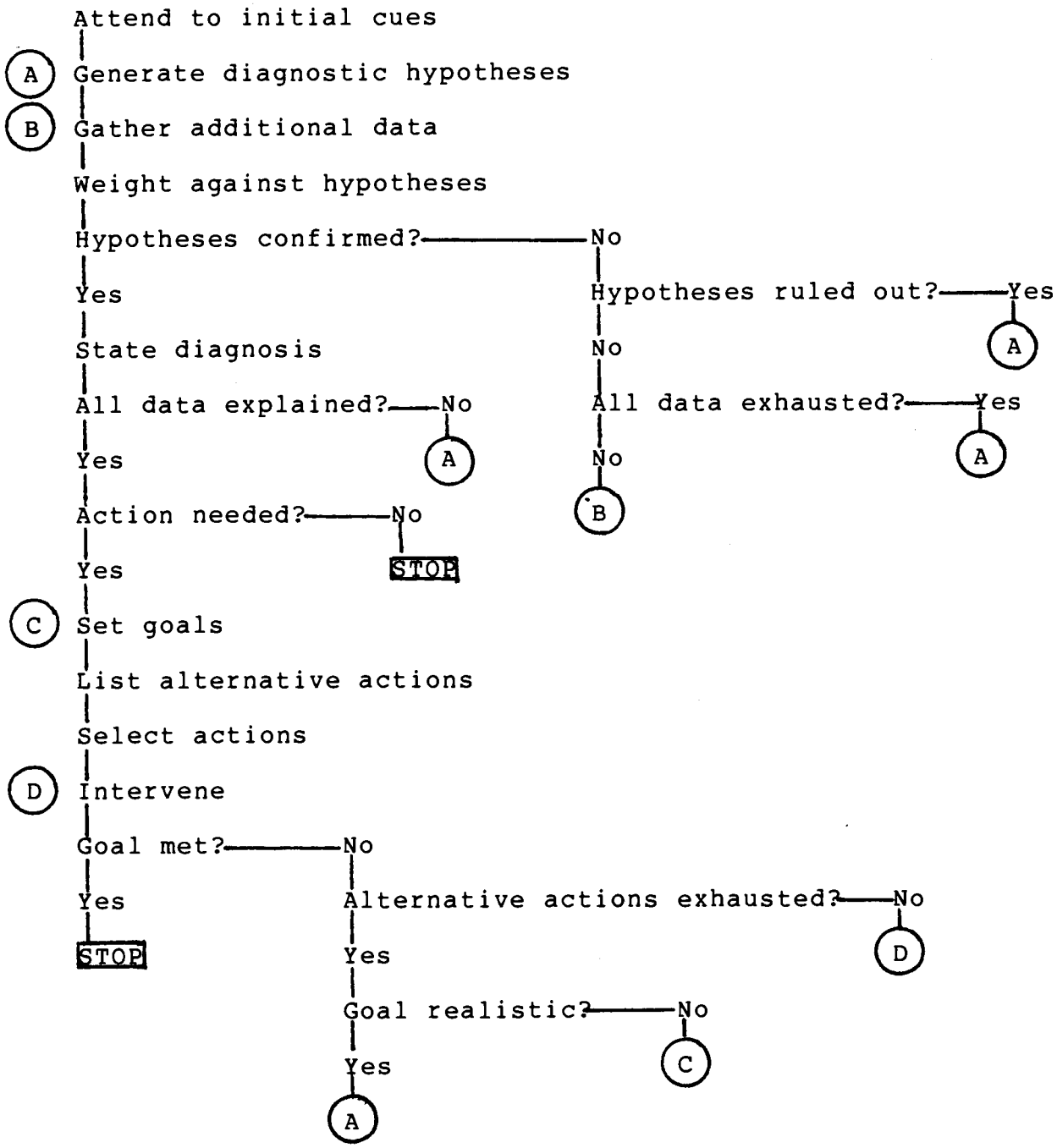
Initially, the simulation format was examined to see how closely it compared to the cognitive and decision processes identified by Tanner and Aspinall (1981). The nursing process does utilize memory recall with interpretation and decision based upon the information generated by recall and interpretation. It is noteworthy that Knor included directions in her simulations that act to stimulate recall of information with interpretation. These directions stimulate participants to attend to initial cues, to generate patient problems and to interpret the cues in light of the problems. The statement "Record any cues into the Cue column of the Answer Record" directs participants to attend to the initial cues. The statement, "At this time, indicate any actual or potential patient problems and record them in order of priority into the spaces at the top of the Answer Record. (Problems already

recorded do not have to be recorded again)" directs participants to consider all the data collected and to formulate the patient's problems. Recording the cue weightings helps participants prove the existence of the formulated problems.

Problem Identification Phase

In the assessment and diagnostic stages of the problem identification phase, there are three points in the simulations at which decision flow chart statements currently exist or are incorporated: 1) at the conclusion of the introductory statement, 2) at the beginning of each data collection option, and, 3) at the beginning of subsequent bridging sections. The directions correspond to the steps in the flow chart in Figure 7 which is modelled on the model of thinking processes identified by Aspinall and Tanner (1981).

Assessment. The statement following the introductory information directs participants to "Record any cues into the Cue column of the ANSWER BOOKLET." This statement corresponds to the first step in the decision flow chart "Attend to initial cues." Aspinall and Tanner (1981) noted that one of the pitfalls in making a nursing diagnosis is "failure to associate initially available data with plausible diagnostic hypotheses"(p.) Therefore, it is assumed that a statement directing the student to pay attention to cues will increase the chance of that occurring. Identification of the initial cues stimulates the student to think about what the problem might be and to focus in on other data to be gathered.



Questions	Decision points in diagnostic and decision process
Action statements	Process activities requiring knowledge recall from memory for cue interpretation
○	Reentry points to the flow chart

Figure 7. Diagnostic and Decision Flow Chart.

With the number of cues provided to novices, it is very likely they will delay hypothesis generation. This is theorized to result in imprecise diagnostic statements. Elstein et al. (1978) and Tanner (1981) stressed the importance of providing larger numbers of cues for less skilled diagnosticians. Novices may require larger numbers of cues because of lack of knowledge and inability to go beyond the information given to infer the diagnosis in the manner of the expert.

Novices' generation of diagnostic hypotheses is expected to be explicitly stimulated with the direction to "Record any possible nursing diagnoses into the appropriate spaces at the top of the Nursing Diagnosis columns of the ANSWER BOOKLET." This statement corresponds to the flow chart process activity "Generate diagnostic hypotheses" seen in Figure 7. It directs participants to produce all possible diagnostic hypotheses and to produce them early, based on the information provided by the initial cues. The initial cues, as postulated by Elstein et al. (1978), are expected to be enough to stimulate participants to associate the cues with sets of hypotheses. The direction to generate all possible hypotheses directs participants to include all the hypotheses thought of that are relevant given the information available. Tanner (1981) noted that generating all of the hypotheses that were relevant increases the chance of the correct diagnosis being identified if it is included in the original set of hypotheses.

Early and complete generation of the diagnostic hypotheses is seen to guide further data gathering. This activity corresponds to "Additional data gathering" seen in

Figure 7. Aspinall and Tanner (1981) argue that the compilation of all possible hypotheses early in the process likely prevents missing relevant data when collecting data.

Lack of experience with generating diagnoses and with differentiating among similar diagnoses may be responsible for delayed hypothesis generation on the part of the novice. This inexperience needs to be recognized and acknowledged. Repetition with simulations is expected to overcome the problem of lack of experience with hypothesis generation as is feedback with the modal answer records.

Following completion of the introductory segment with the initial cues and early hypothesis generation, participants are directed to the first bridging section A. An approach is selected leading to another stage of the nursing process. If participants have responded to the direction to generate early hypotheses, they should now respond with a search for further data. This could be from the chart, physical assessment or an interview. If participants have recorded all possible hypotheses, then a broad data collection will occur. The search for additional data infers recall of stored knowledge about what kinds of data should be gathered and what tools are useful for gathering the data. Figure 8 shows the instructions in the introductory section, the bridging instructions and the first bridging section of Simulation One.

Figure 8. Introductory and Bridging Section Instructions

INTRODUCTORY INFORMATION

You are working the day shift and are assigned to care for Mrs. Andrew, age 60. At the change of shift you learn that Mrs. Andrew was admitted yesterday (January 23) with a hiatus hernia. She is scheduled to have a hiatus hernia repair at 1330 today. Blood work was done and specimen was sent for urinalysis yesterday. Her abdominal shave prep was done last evening and she was given a Dulcolax suppository at h.s. She refused h.s. sedation. At 0615 Mrs. Andrew ate a clear fluid breakfast, and was then placed on NPO. She will have an ECG done this a.m. She requires a N/G tube pre-operatively and her pre-operative medication is due at 1230. It is now 0750.

Record any cues into the "Cue" column of the ANSWER BOOKLET.

Record any possible nursing diagnoses into the appropriate spaces at the top of the "Nursing Diagnosis" columns of the ANSWER BOOKLET. If there is more than one diagnosis, record them in order of priority.

Proceed to Section A.

Section A.

Choose ONLY ONE initial approach.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Proceed as directed in the ANSWER BOOKLET.

A1. Complete a physical assessment.

A2. Read the Kardex.

A3. Read the chart.

A4. Interview the patient.

A5. Initiate care.

A6. Consult the team leader.

At the beginning of each data collection option section participants are directed to "select as many items as are needed to provide necessary information about the patient." Elstein et al. (1978) and Aspinall (1979) claim that novice participants require more data to be able to derive a diagnostic hypothesis than do the expert nurses. This is likely true of confirmation of diagnoses. Novices have few experiences to draw on. They would not have the confidence of several confirmations of the diagnosis to rely on when comparing the data collected to the hypotheses. Thus, more data would likely be necessary to provide confirmation of one hypothesis as the nursing diagnosis.

Once participants have gathered data beyond the initial information, they are directed, at the beginning of a bridging section, to "record any possible nursing diagnoses in the appropriate spaces at the top of the Nursing Diagnosis columns of the ANSWER BOOKLET" and to "revise any existing nursing diagnoses as necessary." These statements correspond to the process activity "State diagnosis" seen in Figure 7. The statements infer the decision points related to confimation, ruling out and exhausting the data. They also infer the decision point "Is all the data explained?" Participants are being asked to generate any additional hypotheses given the new data. More importantly, they are being directed to test the multiple hypotheses with the cues already gathered, as described by Gordon (1982). This narrows the hypotheses down from the general set of hypotheses to the more specific single hypotheses. It is assumed that participants will be able to reduce the larger set of general hypotheses to a smaller set of individual hypotheses

which then are tested one at a time against the data present.

At the same time participants are directed to "record the cue interpretation weightings in the spaces corresponding to the Cue lines and the Nursing Diagnosis columns." The corresponding Decision tree process activity is "Weight against hypotheses" seen in Figure 7. Recording of the cue interpretation weights shows the relationship of the cues to the diagnostic hypotheses. Elstein et al. (1978) developed a three point scale for cue interpretation in relation to the hypotheses. If the data indicate the presence of the hypothesis, it is considered to be confirming or positive (+). If the data indicate that the hypothesis should not be present, then it is disconfirming or negative (-). When the data has no relationship to the hypothesis, it is considered to be noncontributory (Ø). Thus, participants have a clear picture of each hypothesis with the data that relates to it. In this way, they can see if there is enough confirming data (+) to support the hypothesis as the nursing diagnosis. They are also able to see if there is disconfirming data (-) which may rule out the diagnosis even in the presence of confirming data. This prevents overestimation of the value of confirming data and reliance on recency of experience for confirmation (Aspinall & Tanner, 1981). Aspinall and Tanner noted that nurses have a tendency to lean toward confirmatory data and to ignore disconfirmatory data. The direction to record all hypotheses and then weight the cues against them follows a systematic process of hypothesis evaluation which avoids that pitfall.

The recording of the cues in the answer record presents

a visual representation of the cues for participants. As stated in the previous paragraph, it provides evidence of the relationship of the cues to the hypothesis. The recording also provides immediate feedback to the participant on the decision taken about the diagnosis.

Figure 9 shows the instructions in the first option section related to assessment from Simulation One.

Nursing diagnosis. The directions to record any nursing diagnoses is repeated at the beginning of subsequent bridging sections. Participants are expected to evaluate the diagnostic hypotheses using the data collected. The general set of hypotheses become more refined as they are revised using new data as it is collected. At some point during the assessment stage, participants are expected to decide if there is enough data to make a decision about the nursing diagnosis.

Consideration of disconfirming data along with confirming data for each hypothesis ensures careful evaluation and accuracy of nursing diagnosis. During the process of evaluating, revising and refining the hypotheses, participants compare the confirming data against the disconfirming data and decide whether the hypotheses should continue to be considered for the nursing diagnosis or be ruled out. Participants continue matching data against hypotheses until all the data is exhausted and all or the majority of the data supports the designation of one hypothesis as the nursing diagnosis. This activity corresponds to the decision points "Hypothesis confirmed, hypothesis ruled out, all data exhausted, all data explained?" seen in Figure 7.

Figure 9. Option Section Related to Assessment

Section C.

At this time select AS MANY items as needed to provide necessary information about the patient.

As you select each item, use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed, proceed to Section K, unless otherwise directed in the ANSWER BOOKLET.

C1. Vital sign pattern.

C2. Medical orders.

C3. Ability to rest.

C4. Emotional status prior to surgery.

C5. Pre-operative lab. tests.

C6. Medical diagnosis.

C7. Medical treatment regimen.

C8. History of dyspnea.

C9. Smoking habit.

C10. History of dizziness and weakness.

C11. History of cough.

C12. History of eating habits.

C13. History of problems related to eating or drinking.

C14. History of assistance needed with meals.

C15. Amount of usual fluid intake per day.

C16. Routines before and after meals.

C17. Food and fluid likes.

C18. Food and fluid dislikes.

C19. Weight and Height.

C20. Change in weight within the last three months.

C21. Usual alcohol intake.

C22. Medication taken at home.

C23. Usual bowel habits.

C24. Bowel elimination aids.

C25. Usual urinary habits.

C26. Urinary discomforts.

C27. Interests and hobbies.

C28. Specific exercise program.

C29. Adequate energy to accomplish daily activities.

C30. Activity restrictions.

C31. Hours of sleep.

The problem identification phase is complete when the nursing diagnosis is determined. The decision tree can be also be used to direct participants to make decisions about nursing care though it was not stressed in this set of materials.

Problem Solving Phase

Once the diagnosis is made, participants are directed to the problem solving phase of the nursing process via a bridging section. The second major change was made to the Knor's simulations at this point. Though the decision tree can be used to select actions, it was decided to use a matrix to systematically evaluate the alternative actions on the basis of desirability, probability of consequences, and risk. Bower (1982) described how decision guidelines direct a nurse to evaluate alternative actions in a systematic and logical manner. The selection of a choice from among many possibilities in order to meet a goal is complex. Therefore, it is necessary to evaluate the alternatives in a sensible and defensible manner.

The decision matrix provides a framework that allows the student to record the relevant information necessary to help her or him choose among the appropriate actions for that problem, that is, alternative actions, consequences, desirableness of consequences, probability estimates, and risk estimates. An example of a decision matrix is shown in Figure 10.

Figure 10. Example of Decision Matrix

GOAL OF CARE _____

ALTERNATIVE ACTIONS	X	CONSEQUENCES	PROBABILITY	RISK

Planning and implementation. At the beginning of the nursing action option section, participants are directed: "For each nursing diagnosis listed, record a goal of patient care in the space immediately below that of the nursing diagnosis." Goals give direction to the selection of appropriate alternative nursing actions. Also, the outcome of the actions can be evaluated for effectiveness at the conclusion of care by comparing the outcome to the goal (Bower, 1982). With goals established, the choice of actions can be facilitated by systematic analysis and comparison of the alternatives.

At this point participants are directed to "record each goal at the top of a decision matrix sheet." The presence of the goal is helpful in directing the selection of appropriate alternative actions to be considered for the care of the patient. The goal also helps in determining the seriousness of occurrence of the consequences and the risk.

Participants are then directed to "select the nursing actions that are most appropriate to achieving the goal and record them on the decision matrix sheet." Lists of plausible actions are provided in the option section related to nursing actions.

It is best for participants to limit the number of alternative actions to between two and four. Bower (1982) noted that research has shown that executives weigh only two, three, or four alternatives when making a decision. More alternatives than this creates confusion, because of cluttering the mind with too many ideas (p. 156).

The next step is to identify the most appropriate and

effective actions for the care of the patient. Participants are directed to "identify the most appropriate actions using the guidelines for selection." At this time participants are expected to refer to the Instructions for Completing Nursing Actions Decision Matrix found at the beginning of the simulation exercise. An example of the instructions for completing the decision matrix is shown in Figure 6.

Once the participants have selected the alternative actions from the option section on nursing action, they are directed to "list the selected actions in the column Alternative Actions. Leave 4 - 6 lines between each action." The space allowed is for the entry of the consequences, probability and risk.

The next instruction directs participants to "list all the consequences of the action in the column Consequences. Number each consequence. In the column immediately adjacent to the left place an asterisk (*) beside those consequences which are positive or good." According to Bower (1982), generating alternative actions and their consequences before implementation calls attention to what might occur, allowing nurses to choose the most appropriate action. Also, Bower notes that the desirability of a consequence influences the decision about the selection of the action.

Participants are then instructed to "calculate the probability or chance that each consequence has of occurring for that action and that patient." A key is provided from which to make the estimate and is seen in Figure 11.

Participants are expected to estimate how likely it is

that each of the consequences will occur if the action is implemented. Estimates of probability of occurrence of the consequence and risk from the consequence are educated guesses about what will happen to the patient as a result of the action. Probability or chance of occurrence of the consequence can be calculated both subjectively and objectively. However, subjective estimate, based on experience and reported occurrence, is used by most nurses. Objective prediction of the probability of the consequence happening requires statistical information, and the student nurse does not yet have the theoretical background to use statistical information in this way. Bower (1982) claimed that the ability to predict the appearance of consequences depend upon the knowledge and experience of the person doing the predicting. Therefore it is assumed that student nurses (novices) would estimate probability and risk with less accuracy. As a result, estimates of probability and risk are described in subjective terms. Despite lack of accuracy, subjective statements are used because of the lack of knowledge in novices of the frequency with which consequences occur.

When the participants have calculated the probability of occurrence of the consequences, they are directed to calculate the degree of risk. "Calculate the risk of the consequence if the action is implemented. Consider the chance of occurrence when calculating the risk." Again, participants are referred to a key for a set of estimates. See Figure 11. Participants then rate the risk of the consequence to the patient and thereby rate the risk of the action. Risk refers to the potential for harm to

the agency and the care-giver as well as the patient. Thus, not all actions that are deemed appropriate and effective for the patient may be implemented because of overriding risk to the agency, for example, lawsuit, or, to the nurse, for example, back injury if no equipment or other staff available. The degree of risk estimated depends upon the likelihood of the consequence occurring. An action is considered low risk if the harmful consequences are unlikely to occur. Bower (1982) states that consequences of high probability and low risk outweigh the consequences with low probability whatever the risk.

Probability estimate key:

High	Very likely to occur
Questionable	5Ø-5Ø chance to occur
Low	Highly unlikely to occur

Risk estimate key:

High	Threatens the patient
Moderate	Can cause serious harm
Low	Can cause some harm
None	Causes no harm

Figure 11. Estimates of Probability of Occurrence of Consequences and Risk.

When all the information is recorded about alternate action, consequences, probability of occurrence, and risk, participants are directed to "select the action whose consequences have the highest probability of occurring, the highest overall value for the desired effect, and the least risk for the patient, agency or nurse." Participants are then expected to assess the actions with this in mind. An example of the comparison is best seen in Table 2 in Chapter Two. Action Three is the most desirable because it has two consequences that

are desirable with a high chance of occurring and very little chance of risk. It also has only one undesirable consequence which only has a questionnable chance of occurring. Actions One and Four each have only one consequence that is desirable with high chance of occurrence and low risk, while action Two has an undesirable consequence only. This systematic evaluation is what is expected of the participants. In this way, the most appropriate action is identified considering the decision rule described by Bower (1982): choose the action whose consequences have the greatest chance of happening and whose overall values are highest for the desired effect, yet provide the least risk to the client, agency or nurse.

Participants are then instructed to return to the section of the simulation that they are in. The direction that follows instructs participants to "record the selected action(s) in the space corresponding to the Cue line and the appropriate Nursing Diagnosis column in the ANSWER BOOKLET." Participants are then directed to reveal the latent image response to the selected action. The revealed response in the answer booklet provides feedback about the decision. If the participants have used the decision matrix appropriately, the response should indicate a resolution to the problem. If the decision matrix is not used appropriately, or if the participants are unable to generate either accurate consequences or estimates of probability and risk, then the responses to the selected action would indicate lack of resolution of the problem or harm to the patient.

Additional instructions are provided, asking

participants to consider that some of the actions may be adjuncts to the selected appropriate action and to proceed with selecting and recording them. The instructions may ask the participants to continue on to another set of assessments accompanied by hypothesis generation and diagnostic confirmation, ending in utilization of the decision matrices for selection of actions for the new nursing diagnoses. This cycle can continue indefinitely in the clinical setting where a patient's situation changes because of a variety of responses, for example; response to therapy or interaction with undiscovered problems. Figure 12 displays the instructions in the option section related to nursing actions from Simulation One.

Figure 12. Option Section Related to Nursing Actions

Section E.

It is now 0930.

For each nursing diagnosis listed a goal of patient care in the space immediately below that nursing diagnosis.

Record each goal at the top of a decision matrix sheet. Then select the nursing actions that are appropriate to achieving the goal and record them on the decision matrix sheet.

Identify the most appropriate actions using the guidelines for selection.

Complete one decision matrix sheet for each goal of patient care.

Record the selected action(s) in the space corresponding to the "Cue" line and the appropriate "Nursing Diagnosis" column in the ANSWER BOOKLET. Use the special marker to gently rub the "Cue" space adjacent to the selected item and note the result of the nursing actions.

Select and record all other actions in the order that you would judge would be necessary to provide total care for the patient, into the spaces corresponding to the selected item and the Nursing Diagnosis column. Use the special marker to gently rub the "Cue" space adjacent to the selected item and note the result of the nursing action.

When the result of the nursing action shows that a patient problem has been resolved, draw a bold line in the space in the appropriate "Nursing Diagnosis" column.

When the result of the nursing action shows that a patient problem has NOT been resolved, make another appropriate selection in this section.

If another appropriate item is NOT AVAILABLE proceed as directed below, unless otherwise stated in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed proceed to Section F.

E1. Allow the patient to verbalize her fears about her surgery.

E2. Tell the patient not to worry; everything will be fine.

E3. Reassure the patient that the ECG is routine for anyone who has had a heart attack and that there is probably nothing to worry about..

E4. Reassure the patient that the ECG was done as a precautionary measure. It will give the doctor a good indication of the state of her heart, which will assist him with her medical care.

E5. Explain to your patient the pre-operative care she will receive. In addition, explain what she will experience in the operating room immediately before surgery, and in the recovery room and on the ward post-operatively.

E6. Explain and demonstrate deep breathing and couging, turning, and relaxing and contracting leg exercises.

Development of the Modal Decision Matrices

Modal decision matrices for each of the nursing diagnoses were prepared. The information was drawn from experience and from current information in nursing practise, pharmacology and related fields, from nurse educators and from current textbooks. A goal of care was prepared for each nursing diagnosis and placed at the top of a matrix. A maximum of four alternative actions were listed for each goal in the column Alternative Actions. For each alternative action, three to seven consequences were listed in the Consequence column. All desirable consequences were marked with an asterisk (*) indicating that they are seen as achieving the goal. Estimates of probability of occurrence of the consequences and of risk were recorded in the appropriate columns for Probability and Risk. The key for estimates of probability and risk in Figure 11 were used for the estimates. As these estimates were made subjectively, on the basis of this investigator's experience, the content of the modal decision matrices was considered to be provisionally valid. An example of a completed modal decision matrix is seen in Table 5.

Table 5. Completed Modal Decision Matrix

MODAL DECISION MATRIX - SIMULATION #1

NURSING DIAGNOSIS Anxiety due to previous heart attack

GOAL OF CARE Patient identifies concerns re effect of heart attack on surgery and is relaxed, anxiety decreased

ALTERNATIVE ACTIONS	*	CONSEQUENCES	PROBABILITY	RISK
E1. Allow pt. to verbalize fears	*	1. Anxiety decreases	High	None
about surgery.	*	2. Patient relaxes.	High	None
		3. Anxiety not decreased.	Low	Low
E4. Reassure patient that ECG is	•	1. Understands and anxiety decreased.	High	None
done as a precaution.		2. Does not understand and anxiety not		
		decreased.	Low	Low
E3. Reassure that ECG is routine	•	1. Anxiety decreased.	Low	None
----		2. Anxiety increased.	Low	Low
		3. No effect on anxiety.	Questionable	Low
E5. Explain to patient re pre and	•	1. Understands and anxiety decreased.	High	None
post op care.		2. Does not understand, anxiety not		
		decreased.	Low	Low

A further check of content validity of the matrices was made empirically by comparing the decisions of four nurse educators to the optimal decisions established for each nursing diagnosis and goal. This determined whether the matrices reflected how practitioners select their actions, which consequences they would consider, and what values they would place on probability of occurrence and risk. In the cases where there was disagreement between the optimal matrix and the performance of the nurse educators, changes were made to the optimal matrix. The most frequently recorded consequences, and estimates of probability and risk were used in finalizing the modal decision matrices.

To ensure that the validity of the modal decision matrix would be maintained, the nurse educators were oriented only to the mechanical aspects of completing the decision matrix. They were given a copy of the keys for estimating probability and risk and were given instruction on the mechanics of completing the decision matrix. Each of the nurse educators was asked to review a partially completed modal answer record where the selected actions were deleted. The nurse educators were then instructed to assume that they had completed the exercise to that point. They were then instructed to use the decision matrix to assist them in selecting the most appropriate nursing actions to meet the goal. If other actions could be used but were less appropriate, the nurse educators were to rank those actions in order of importance, that is, 1 for most appropriate, 2 for second most appropriate. The simulation exercise, established nursing diagnoses, and appropriateness of selected items or cues

prior to action selection were not discussed. This omission was considered necessary in maintaining the validity of the modal answer records. The purpose was to reflect only that choice the expert would make when faced with alternative actions.

CHAPTER FOUR

Evaluation of Materials

Test Instrument Development

Description of Knor's Test Instrument

The test instrument to measure the effectiveness of the simulations was taken, in part, from the test instrument developed by Knor (1980). This test instrument was a 40-item written examination designed to measure the subject's ability on six dependent variables: patient problem identification, cue selection, first action and three self-confidence scores. A self-confidence score was linked to the response scores for patient problem identification, cue selection and first nursing action. The test instrument was developed for use as a pretest and a posttest.

Revised instrument

The instrument was modified and expanded with the expectation that it would measure the decision making ability of the participant. Parallel tests were developed. The tests present a specific data base from which a nursing diagnosis can be derived and a decision on optimal action can be made. As such, it calls for an analysis of patient problems from a set data base. The test also calls for a statements of the optimal nursing action or set of actions selected from a set of alternatives.

Content validity. The information in each item is drawn from actual situations found in medical records and/or current nursing literature. The content of the items was determined to

be similar to that taught in Semesters Two and Three of the Douglas College Nursing Program.

The first alteration made to the Knor's instrument was the inclusion of nursing diagnosis terminology now in use in most nursing education materials. The terminology was developed and accepted by the North American Nursing Diagnosis Association (Kim & Moritz, 1981). Eight human need categories are represented. Each category represents common nursing diagnoses studied in the first three semesters of the Douglas College Nursing Programme. The categories of nursing diagnoses used in the test instrument and the number of items per category are as follows: oxygen needs (7), nutrition and fluid needs (7), safety and security (12) stimulation needs (2), potential for injury (1), need for pain avoidance (7), need for self esteem (3), and, need for love and belonging (1) (Atkinson & Murray, 1984; Thompson, Mcfarland, Hirsch, Tucker, & Bowers, 1986).

The order-of-process score used by Knor (1980) was changed to selection of optimal action score. The participants select the optimal action from among four actions.

The test instrument measured seven dependent variables: nursing diagnosis, cue selection, choice of optimal action or optimal set of actions, and three self-confidence scores. Each self-confidence score is linked to nursing diagnosis, cue selection and interpretation, and nursing action selection.

Each test contains 40 items. Each item consists of a patient situation in which a number of cues was presented. For each item, the subject is requested to provide two sets of written responses and two sets of selected responses. The first

response is a diagnosis of the patient's problem. After reading the patient situation, participants state what the nursing diagnosis is.

The second written response is the selection and interpretation of the cues. Here, participants list the cues used to formulate the diagnosis. Further, participants indicate the relationship of these cues to the diagnosed problem, using a three point response format of positive, negative, and noncontributory.

The first selected reponse results in a choice-of-optimal-action score. Based on the diagnosed patient problem, participants select from a fixed set of nursing action responses the optimal action for intervention in the problem.

The second selected response pertains to participants' confidence in their answers on the first three variables. Using a five point scale, with high scores indicating certainty, participants note how confident they felt with respect to choice of nursing diagnosis, selection of cues and choice of optimal action. The scale was adapted from Hammond et al. (1966, cited in Knor, 1980). It is hypothesized that students who learned the strategies for decision making would feel greater confidence when making nursing diagnoses, selecting and interpreting cues, and choosing the optimal action. An example of one of the test items is illustrated in Figure 13a and 13b.

Figure 13a. Example of Test Item

1. SITUATION:

Mr. Brown, age 62, is being investigated for epigastric pain and indigestion. He is scheduled for a gastric analysis in the a.m. You notice that he has been pacing up and down the hall. When you greet him you find a tense facial expression, and upon touching his hand you note his hands are damp and cold. Your comment "You seem worried" brings this response, "It's this waiting. I just want it over so I know what's going on!"

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

Figure 13b.

PART C: Nursing Action

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to express how he feels using open-ended questions.

_____ 2. Ask him what he understands about the procedure.

_____ 3. Explain what the procedure involves.

_____ 4. Sit down with him and let him talk.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

Scoring Key

The participants' performance on nursing diagnosis, cue selection and interpretation, and choice-of-optimal-action is measured by means of a scoring key. The key was adapted, in part, from Knor (1980), and extended to cover the new test items. Since each item was designed to test a participant's performance on a static number of cues with pre-determined validities to the task, the portion of the scoring key adapted was assumed a priori to have criterion validity. However, the completed key was further validated by comparing it to the performance of nurse educators. Validation of cues was done on all items, new and existing, because of changes made to the items in this study.

Four nurse educators took the two tests at an interval of two weeks in order to provide data for an estimate of agreement in their responses with the scoring key. Evidence presented by Elstein et al. (1978) showed a lack of intraindividual consistency on the problem solving process across problems.

High correlation between the pretest and the posttest for each of the variables would indicate that both forms measure the same variables. High correlation among the nurse educators' responses on the equivalent forms and the scoring keys would indicate agreement among the nurse educators and the keys for the variables. Therefore the scoring keys would be considered validated. Low correlation among the responses of the experts and the scoring keys would indicate a small but positive relationship. However, with such low agreement, it could be that

the nurse educators are not truly expert in this area of nursing knowledge, the time element between testing allowed recent experience to influence the response to some items, the tests have not been adequately assessed for accuracy prior to testing, inaccuracies exist in some of the items or the tests do not measure the same variables.

A comparison was made of the responses made on each item on the pretest to the responses made for the corresponding items on the posttest. Five sets of responses were evaluated - the four nurse experts and the scoring key. The comparison looked for agreement between the tests for the responses of nursing diagnosis, number of cues selected, and choice of action.

Nursing diagnosis. Out of forty items, twenty-six were found to have between seventy-five and one hundred percent agreement by the nurse educators and the scoring keys on nursing diagnosis on both forms of the test. Since the sample of educators was small, a twenty-five percent variability was permitted among the nurse educators on the basis of differing years of experience, area of expertise, and recency of clinical practice. As a result, it was felt that the fourteen items that fell below seventy-five percent agreement by the nurse educators and the scoring keys precluded them from being considered for agreement on cue selection and use or for selection of nursing action. The lack of agreement on all items for nursing diagnosis could likely be due to insufficient information to make a definitive nursing diagnosis or to lack of knowledge about the nursing diagnosis of the part of the nurse educators. A third reason for lack of agreement could be lack of familiarity with

nursing diagnosis nomenclature or difficulty in translation from patient problem statement to nursing diagnosis terminology. Lack of agreement could also be as a result of poor item preparation on the part of the test developer, that is, use of a general set of cues suitable for a similar set of hypotheses rather than for the specific nursing diagnosis in the described situation. The agreement on the twenty-six items was Ø.98. Overall agreement for all items on both tests was Ø.83. The results are seen in Table 6.

Cue selection. Agreement among the key and the nurse educators on cue selection was high at Ø.92 for the twenty-six items examined. This indicates a high degree of stability on cues for the twenty-six items. This is likely due to a consistently similar knowledge base in relation to cues found in these nurse educators. It also indicates agreement between the nurse educators and the textbook information used to prepare the key. Percent agreement for cues on all items was lower at Ø.89. These figures are seen in Table 6.

Nursing actions. Agreement on nursing actions was significantly lower. Agreement among the nurse educators and the scoring key on the correctly selected optimal actions on both forms for the twenty-six items was Ø.67 and among correctly selected sets of actions was Ø.63. This compares with Ø.64 and Ø.57 for actions on forty items. Lower agreement for actions would be consistent with the variability normally found when making decisons about actions. Variability in the environment, the nurse, and in the patient results in less agreement on actions than in diagnosis or in cue selection. This is confirmed

by Elstein et al. (1978).

The results of the comparison are seen in Table 6:

Table 6. Percent Agreement of Responses by Nurse Educators and Scoring Keys on Tests A and B.

Variable	% agreement on 26 items	% agreement on 40 items
Nursing Diagnosis	0.98	0.83
Selection of Cues	0.93	0.93
Optimal Action	0.67	0.64
Sets of Actions	0.63	0.57

Thus the test instruments were found to be highly correlated on twenty-six items. As a result, the fourteen items that had agreement below 0.75 for nursing diagnosis should be revised and checked for validity and stability before being used. The scoring key is seen in Appendix I.

Implementation of Simulations

Trial One

During the course of development, two trials were held. The first trial tested some minimal changes to the simulations and the inclusion of some of the original ideas about the test instruments. The findings resulted in the changes to the test instrument described in the preceding discussion and in the final development of the simulation exercises.

Trial Two

The second trial was conducted as a limited study of the simulations and the test instruments. Limitations precluding a full study were 1) a small sample of students, 2) loss of

several participants during the first few weeks of the study, 3) a limited test instrument.

Thirteen students from semester six of the general and psychiatric nursing programs took part in this trial one year after the first trial. Six volunteered from the general nursing program and seven from the psychiatric nursing program.

Preparation for the trial. The participants were randomly divided into two groups; one group was defined as the control group, the second as the experimental group.

The control group participants were given the following materials for Simulation One: 1) exercise booklet, 2) answer booklet with the responses prepared in latent image, 3) a latent image developer pen, and, 4) a pencil to record the initial data from the introductory statement, nursing diagnoses and goal statements and the sequence of events during the selection of bridging items.

First, the control group was given instructions on how to develop latent image. The instructions at the beginning of the simulation were then reviewed with them. Next, the introductory statement in the situation was reviewed. The participants were asked to respond to the directions at the conclusion of the introductory statement. At this time, the participants were then guided through the use of the answer booklet. They were shown how to record the sequence of events. The concept of cue interpretation and weighting was described and checked for understanding through question and answer. The participants were then asked to complete the exercise.

The experimental group was oriented to the use of the

materials in the same manner as the control group. The participants received: 1) the exercise booklet containing the decision tree flow chart statements and the decision matrix use statements, 2) blank decision matrices, 3) the answer booklet prepared in latent image, 4) the special developer pens, and, 5) a pencil to record the sequence of selection of bridging options, initial data, nursing diagnoses, and goals on the Answer Booklet and goals, selected alternative nursing actions, consequences and probabilities of occurrence and risk on the decision matrix sheets. In addition to direction on how to proceed through the simulation, the instructions guiding the use of the flow chart and decision matrix were discussed with te experimental group. The group also received a brief description of the decision tree and how it functions as well as a description of the decision matrix and how it works.

Implementation. The trial consisted of pretesting, posttesting and completing five simulations. Participants were tested with Test A for initial scores in the areas of nursing diagnosis, cue selection and selection of optimal action and sets of actions. It also helped to evaluate the time requirement for the completion of the test.

The participants were then given the first simulation to complete. They were allowed to take the simulations home. The participants received a simulation exercise with related materials each week for five weeks. As they completed each exercise, the participants would pick up the feedback materials and a new exercise.

Feedback was presented in verbal and written forms.

Participants were allowed 30 minutes with the researcher to discuss any difficulties in completing the simulation. They were also able to phone for clarification of instructions or to identify any responses that might not come through clearly on the answer records. Written feedback consisted of the modal answer records developed by Knor (1980) for the original simulations. Since the format of the simulations had not changed and the changes in content would not affect the outcome, the modal answer records were left unchanged except where procedures or practices have changed. The initial intent was to provide participants with an outline of all the potential routes through the nursing process for each simulation. However, this feedback was not fully implemented because of investigator error. The experimental group received a set of modal decision matrices for the simulations in addition to the materials received by the control group. The modal answer record and the alternate route for the simulations are seen in Appendices E and F. The modal decision matrix is seen in Appendix G.

At the completion of the five weeks, the participants were tested with Test B.

CHAPTER FIVE

Results and Recommendations

This study attempted to develop and test the effectiveness of a method to teach the cognitive tasks that lead to clinical judgement and decision making in nursing. These cognitive tasks were to identify relevant initial cues in a complex environment, interpret the cues, establish diagnostic hypotheses and use them to guide the subsequent data search, test out the hypotheses, establish the nursing diagnosis, compare alternative actions and select the most appropiate action to solve the patient's problem. A set of existing written simulation exercises teaching the nursing process was modified to include these skills. As well, an existing test instrument designed to measure the degree of learning achieved in the simulation of the nursing process was modified. The instrument was to test the degree of learning which might take place as a result of completion of the experimental simulation exercises. This chapter will present the results of the trial, the limitations of the trial, the expectations of the study materials, and the reconstruction of the materials for future use.

Outcome of Trials

At the conclusion of trial two, it was evident that few of the students had completed the exercise. Four out of twelve participants completed the five simulations and the two tests. Of the four students who completed the trial, only one was

assigned to the experimental group.

Of the participants that did not complete the trial, three stated that they were unable to continue due to other commitments. Two participants stated that they would not be able to continue, but were vague as to the reason. Two participants completing a ten week course to qualify for nurse registration expressed dismay that the content of the test was not familiar to them; they did not reappear after the orientation to the simulations. Following several efforts to establish contact, it was found that they had completed the course and they were no longer at the college. An eighth participant completed the experimental exercises up to the point of the posttest. Due to her very busy schedule, she was not available for posttesting for over two months after the completion of the last simulation exercise. At that point, this investigator concluded that it was not helpful to posttest at this delayed date.

Because of lack of success in completing the trial, a limited amount of useful information was gathered. The pretest and posttest sessions did show that the tests could be completed within 2 hours. The participants found that the information was clear and that they could complete each section of the test. The participants were told that they could answer the nursing diagnosis section of the test with patient problem statements if they did not know nursing diagnosis terminology. These students had had little on the nursing diagnosis terminology and the terminology was just being introduced into the program at the first year level. An additional problem arose because there are few nursing diagnosis statements for psychiatric health problems

which have been well developed.

Informal responses from participants who completed all five simulations were favourable. These participants stated that they enjoyed the novelty of the exercises. General nursing student participants stated that they felt that the information was helpful as a theoretical review in preparation for the national registration exams. The participant who completed the experimental exercise stated that she found that the medical-surgical content of the situations was less relevant to her because she was in psychiatric nursing. Though the participants who did not complete the trial were not interviewed about their withdrawal, two general nurse student participants who had experimental exercises stated that they found that the materials required much more time than they felt that they could give. This statement coupled with the fact that only two out of five who completed the simulation exercises were working with the experimental exercises implies that the experimental exercises might be cumbersome in their present format. This bears further examination.

Limitations

There were several limitations to the trial which affected the possibility of continuing with a follow-up full-fledged study. The first was incomplete preparation of the test instrument. The test instrument was developed by this writer. Content validity was established for only twenty-six of the forty items. That left fourteen items with apparently questionable content. The items were not improved prior to the trial. Individual comments about content were received from two

nurse educators following the testing. Their suggestions were noted but not incorporated. Reliability was not established and repeated testing with larger numbers of students is required to obtain sufficient data to establish reliability. Also, the format test instrument was new to the participants. The newness and the difference could be enough to reduce the participants ability to complete the tests effectively the first time and could have an effect on the internal validity of the instrument. A second limitation was the potential of contamination of the trial because the participants are members of a cohesive group. The group meets together and shares ideas and information. Testing was conducted at individual times because of the participants' schedules. Sharing of information about the type of test and the way the simulations were completed possibly affected some potential participants' decision to take part.

A third limitation was the small sample size. Several factors contributed to the lack of participation. The participants were volunteers. The trial was imposed on top of an existing curriculum with a heavy workload. Program commitments, projects in preparation for graduation, and family frequently overrode commitment to complete the trials. As stated in the previous paragraph, sharing of information about the testing might have influenced some potential participants not to take part.

A fourth limitation was the concern of adding additional work to the workload of the students in the Douglas College Nursing Program on the part of colleagues and this investigator. Thus there was reluctance to push hard for the opportunity to

conduct the study in full. The goal to teach decision making was enthusiastically endorsed by the faculty. However, the study required a minimum of two hours a week in addition to a heavy workload for another curriculum with a heavy time commitment which was already in place. There was a reluctance on the part of this writer to replace existing Semester Six theory with the simulations. The content of the simulations was previously learned and the content for Semester Six was new content to be learned. A major error was made on the part of this investigator, in that insufficient preparation was made for gaining acceptance by students and colleagues.

An additional limiting factor was the short time given to teaching concepts of decision tree and decision matrix so that participants in the experimental group were adequately prepared to make sound decisions from a base of knowledge. Thirty minutes of orientation devoted to the use of the decision tree and to the decision matrix is a small amount of time to provide understanding of the concepts. Comments by the participants indicated to this investigator that a more thorough orientation to the decision tree and the decision matrix might encourage persistence with the experimental exercises. An additional problem was that the investigator was the only person involved in the trial. If nursing colleagues had been asked to assist with the trial, more support might have been gained. The assistance of others would have improved the coordination of the two groups.

Experimental Simulation Materials as Curriculum

Curriculum is defined as a "program of studies designed

so that students will achieve set outcomes or attain by learning certain objectives" (Hirst, 1974, p. 2). As a program, curriculum includes a sequence of activities for the teacher and for the student. There are three essential features in curriculum: first, objectives which establish the outcome of the curriculum; second, content to be used; third, methods to be used to bring about learning. The materials prepared for this study contain all the features of curriculum. The objectives are to teach the participant how to make two important decisions. The first decision is to accept the judgement about the nursing diagnosis and the second decision is to select the most appropriate and defensible nursing action. The participant is to deliberate, judge and choose the diagnostic hypothesis that is the nursing diagnosis (Schaefer, 1974). Then the participant is to compare a set of possible alternative actions using specific criteria and select the most appropriate action (Bower, 1982). The content includes nursing process theory, the decision tree from decision theory, and criteria to judge appropriate nursing actions. In addition, previously learned medical-surgical theory is used in the situations that the participants work through. The method used to bring about learning is the written simulation format which incorporates instructions based on the decision tree containing the elements of the diagnostic reasoning process, and the components of the decision matrix. It also includes the implied use of self-questioning when moving through diagnostic reasoning and the application of criteria to a matrix of information about alterative actions.

The use of the simulations with the decision tree and

the decision matrix engages the student nurse in problem solving activities which in turn, can be transferred to the bedside. Thus the teachers do not need to give the answers to the students. Three activities can be engaged in by student nurses when problem solving: 1) selection of relevant data; 2) fitting facts into the clinical judgement process; and, 3) comparison of nursing activities alternatives.

The nursing process has been used for some time and has been a standard part of nursing education curriculum. However, it still is not well used in clinical practice, or it is poorly applied in patient situations. This may be because nurses as students may have not been taught nursing knowledge within the context of the nursing process (Mallick, 1977). It may also be because they have difficulty reorganizing the knowledge into the action-oriented framework when planning care for the individual patient (Mallick, 1977). Having used the experimental simulation exercises to learn decision making, student nurses should not be overwhelmed by the task of devising an individualized care plan for the patient. They do not need to reorganize their nursing knowledge. It is already synthesized and translated into practical terms. Nursing knowledge can then be applied directly to individualized situations. If nursing knowledge is placed within the clinical judgement process, student nurses can go to the clinical setting in order to test their understanding of bodies of knowledge already synthesized by instructors in the classroom rather than to have to synthesize it in the complex environment of clinical or on-the-job practice. The teaching of nursing content within the experimental framework may help

establish the relationship between specific nursing knowledge and specific segments of the judgement and decision process. As Mallick (1977) says, knowledge must be taught not only for its own sake but also for the sake of application.

The written care plan is the most common method used in clinical teaching to emphasize the nursing process. However, Tanner (1986) notes that the care plan as it is traditionally used does not catch the thought processes used in clinical judgement (p. 35). This is also true of decisions about alternative nursing actions. Mallick (1977) noted that there is a tendency for students doing patient care plans to prepare individualized nursing diagnoses and then to plan the care for the patient following the textbook information rather than making the plan individualized. This invalidates attempts to tailor interventions to meet the identified needs of the patient. As well, she noted that nurses fail to follow through from gathering data through nursing histories to completing a care plan based on the assessment. Clinical judgement is a vital, interactive process. The experimental simulation exercises are capable of keeping those qualities intact whereas the written care plan cannot. The use of the experimental simulation exercises with a systematic application of the problem solving process focuses on the careful and accurate judgement and defensible decision making. As such, it ensures accurate diagnosis and individualized care.

Students tend to use the problem solving process in a random order and do not appear to consider each step consciously. Conscious consideration of the data collection and

of the formulation of hypotheses is an important step to accuracy of diagnoses and patient care according to Aspinall and Tanner (1981). Using the simulation with the decision tree and decision matrix is likely to stimulate students to study their approaches consciously, avoiding the pitfalls described by Aspinall and Tanner: incomplete hypothesis generation, incomplete data gathering and early diagnostic closure. This would be best done when combined with instruction on nursing diagnoses and their defining cues, as well as clusters of cues with the general hypotheses. Stored knowledge of the defined diagnoses and their defining cues is compared against the accumulated data to test the hypotheses about the patient's problem(s). The assessment of cues and interpretation is important as the basis for making judgements about care needs.

Another application of this teaching method that may be effective is in the multiple use or repetition of the steps and processes. Thiele, Baldwin, Hyde, Sloan and Strandquist (1986) noted that multiple opportunities to do assessments aid in developing good data collection skills. The same is predicted to hold true of clinical judgement and decision making. Repetition with the simulations should help to develop good collection of relevant data and accurate decision making abilities. It may also help novices move toward the characteristics of the expert in viewing cues as groups rather than as single items. According to Woods (1986), viewing cues as single items is considered a trait found in novices. Use of simulations may also result in novices increasing their choices of relevant cues. The simulation exercises also teach students to sort through the

data and to recognize cues rather than to rely on experience to learn those skills.

The simulation materials can be used in conjunction with other materials to facilitate the acquisition of clinical observation skills. For example, if simulations are combined with audiovisual materials such as videotapes or transparencies, the student can be assessed for adequacy of data collection. This is especially true in areas where clinical resources are minimal or experiences are limited.

The simulations can also be used to validate instructional materials on data collection. The cues specifically related to certain health problems can be presented, then the simulation can be used to validate that the learning materials are teaching what they are intended to teach.

There were some advantages to the experimental clinical judgement and decision making curriculum materials. First, the materials were built on a problem solving process already understood and accepted by the nursing community. Secondly, except for the nursing diagnosis terminology, the materials reflected a level of knowledge already achieved by the participants. Thirdly, the simulation materials were portable. Participants could take the materials home to work on them independently. Sessions to conduct the simulation activities for the group as a whole were not required. This eliminated the limitation of class schedules and investigator availability to conduct group simulation activities.

Several disadvantages were noted as well. First, the situations were not part of the curriculum that the students

were currently taking. This reduced the effectiveness of the learning and the motivation to learn. Secondly, though it was expected that there would be less confusion by not providing information about making choices, some participants expressed some anxiety about how to calculate probability and risk. Thus some more formal discussion about decision theory would likely have been helpful. Thirdly, lack of familiarity with the principle of weighting of cues slowed the participants' completion of the exercises. Fourthly, the concept of nursing diagnosis was fairly new and required frequent interpretation by the researcher to both the participants and the nurse educators who assisted with the modal decision matrices and the test instruments. Finally, minor difficulties with the imaging properties continued, causing frustration for the student.

Experimental Simulation Materials Used in Research

The materials prepared for this thesis can be used for research on judgement and decision making. With improvement of the questionable items, the test instruments can be used to describe the differences between groups of nurses in their ability to make decisions. It is assumed that there are differences in the abilities of student nurses to make clinical judgements and to select defensible nursing actions, based on previous education and experience. If these differences are discovered, the information may assist in the choices made of teaching methods that will be more effective for the various learners.

Research shows that an extensive knowledge base is necessary for effective clinical judgement. However, at what

point is the knowledge base sufficient to make good clinical decisions? Studies could be conducted at the different semester levels of the nursing program. In this way, it could be determined at what point can clinical judgement and decision making be effectively taught in the student nurse's program.

The decision making curriculum materials can also be compared with other methods traditionally used to teach problem solving. It can be determined how this method performs in comparison to the others as a method to teach decision making. The use of simulation plus decision tree and decision matrix can be used to compare student-involved teaching strategies with teacher-involved teaching strategies to determine which promotes the greater ability to formulate nursing diagnoses. For example, if it were demonstrated that the simulation materials were to have only a minimally greater effect than classroom instruction in teaching problem solving, the wide spread use of the curriculum would not be justified in terms of cost of production and time for production. The materials can also be used to determine if a combination of methods is more effective than a single method, and if so, which combination.

The test instruments can be used to test the accuracy of nursing decision behaviour, that is, to analyze the relations between accuracy of problem identification or nursing diagnosis and selection of appropriate nursing action (deBack, 1981). deBack also noted that checking the formulation of nursing diagnoses may be done as one way to analyze the relationship between the ability to formulate nursing diagnoses and teaching strategies and assessment methods.

Reconstruction of the Materials for Future Use

Test instruments. The test instrument requires change in four areas. The fourteen items that had less than 75% agreement for the nursing diagnosis among the four nurse educators and the scoring keys need to be revised to correct content errors. Critical defining cues, as identified by Gordon (1982), should be included in the situation. There should be a list of patient problems corresponding to the nursing diagnoses included in the scoring keys. Content validity and reliability needs to be established for the instruments. The fourteen items that have low agreement for the nursing diagnosis can be improved by altering the situations to include defining cues that are listed in the literature for the nursing diagnoses. Cues that are general for a group of related nursing diagnoses should be removed or decreased in number in each situation. Limiting the general cues should reduce the difficulty that novices have when testing diagnostic hypotheses. The novice who has learned the strategy of self-questioning can eliminate incorrect hypotheses based on knowledge of the cues related to the nursing diagnosis, whereas the novice who has not learned the strategy will not be able to "sift out the wheat from the chaff."

When the fourteen items are revised, the test instruments should be submitted to a panel of nurse experts from nursing education and nursing practice for validation of the content for the nursing diagnoses, the defining and supporting cues, and the selection of the most appropriate first action or sets of actions. The results of the content review would dictate

whether further revision was necessary. At the conclusion of the review, the instruments should then be submitted to a second panel of expert nurse practitioners and nurse educators to assess for content validity, stability and equivalence of the instruments. The next step would be to submit the instruments to testing with a large number of student nurses to establish the reliability of the instruments. The samples should be drawn from more than one nursing program for reliability estimates that might be translated to the general student nurse population.

Difficulty in scoring the nursing diagnosis can be overcome by establishing a corresponding patient problem statement that is accepted by a panel of expert nurse practitioners and nurse educators. This would address the lack of experience with the nursing diagnosis terminology. Allowing the use of patient problem statements would cover the transition stage as the nursing profession moves to adopt the nursing diagnosis terminology identified by the North American Nursing Diagnosis Association.

Simulation exercises teaching clinical judgement and nursing actions decision making skills. Alterations to the simulations should be made in two areas: the content component, and the combination of the two decision concepts within the simulation. In terms of the content, the existing simulations do not need to be altered. What needs to be done, is to develop other simulation exercises to match the content being taught to the student nurses at the time of use. This would overcome the reluctance to add new or additional content on top of a already heavy curriculum. The simulation exercises could then be

proposed for use in place of the written nursing care plan in the clinical setting as a method of teaching the concepts of clinical judgement and action decision making.

One of the more difficult parts of the experimental simulation exercises was the comparison of alternative nursing actions using the decision matrix. This component likely would be best taught outside of the simulation. A unit on decision and utility theory could be developed, incorporating the concept of comparison of alternative actions and the criteria for comparison. The unit could contain exercises for selection of nursing actions using the decision matrix and the criteria for comparison. Once the student nurse had a grasp of the comparison of nursing actions, then nursing action decision making could be added to the simulation exercises.

In the experimental simulation exercises, the instructions provided for the use of the simulations and for the use of the decision matrix are excessive. Too much information increases the difficulty in following directions and leads to frustration, less efficient reading and inadequate review of the instructions prior to attempting the exercise. The instructions in the sections of the simulations leading to selection of nursing actions can also be considered excessive. These instructions also refer the participant to the separate instructions on the use of the decision matrix. These instructions require refining and paring down. Clear concise instructions should improve the quality of completion of the exercises.

The simulation exercises could also be prepared using

computer-assisted instruction. This would offer an alternative learning track for the student nurse. It would also provide an interactive learning experience for the student nurse.

Conclusions

The roles and functions of nurses in the clinical setting are evidence that nurses require the skills of clinical judgement and selection of competing alternative actions. However, workloads are heavy. Assignments are unpredictable. Delegated medical functions have a tradition of assuming highest importance and the biomedical focus has consistent superiority. Therefore, many nurses do not consistently utilize clinical judgement and decision making skills. The education of nurses to expect to make decisions related to clinical judgement depends on the belief of the nurse educators in the necessity of clinical judgement and decision making as well as on the support and encouragement of ward administrators and fellow nurses.

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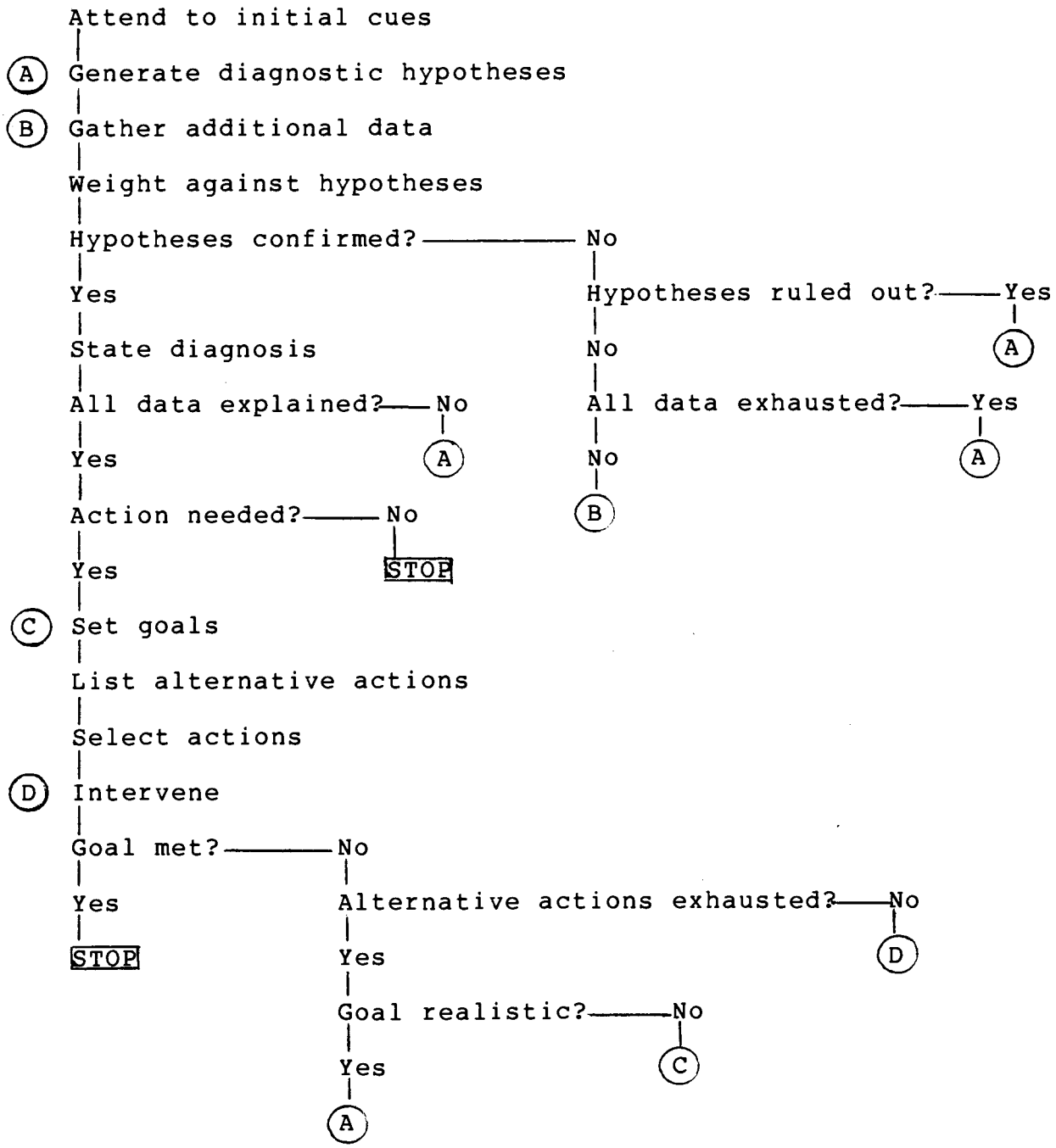
Appendix A

Orientation Materials for Decision Tree and Decision Matrix



Questions	Decision points in diagnostic and decision process
Action statements	Process activities requiring knowledge recall from memory for cue interpretation
◯	Reentry points to the flow chart

Strategies for making a nursing diagnosis using the diagnostic and decision flow chart.

EXAMPLE:
Situation: Mrs. Peters has been admitted with a medical diagnosis of gastroenteritis. She has had diarrhea for two days. Her oral intake today has been 60 ml. in four hours. Her skin turgor is poor.

DECISION TREE	COGNITIVE ACTIVITY AND DECISION
Attend to initial cues	decreased oral intake - 60 ml. diarrhea - two days loss of skin turgor
Generate diagnostic hypotheses	Possible dehydration due to excessive fluid loss in diarrhea
Gather additional data and weight against hypothesis	tongue dry and furred flushed and dry skin weight loss of 3 Kg. dark concentrated urine
Hypothesis confirmed?	Signs of dehydration due to fluid loss are: - intake less than output + - fluid loss due to diarrhea + - loss of skin turgor + - weight loss > 2.3 Kg. + - mucous membranes dry + - urine dark and concentrated + - skin dry and flushed +
Confirmed !	Observed cues weighted positive
State diagnosis	Dehydration due to fluid loss in diarrhea and reduced intake
All data explained?	Yes
Action needed?	Yes
Set Goals	Reduce dehydration, increase fluid intake, balance fluid loss
List alternative actions	Offer 200 ml. oral fluid/hr. Provide I.V. fluids @ 100 ml./hr as per doctor's orders Offer extra fluids at meals only
Selection actions	Use criteria to select most appropriate action
Intervene	Implement chosen action
Goal met?	Judge outcome of action against goal set: Is the dehydration decreased, are signs diminished?

Strategy 2
Application of Guidelines to Select Nursing Action

Choosing between several alternative appropriate actions to meet a particular goal of patient care based upon a diagnosed patient problem is best made by defensible means. An effective method is to identify the alternative actions, list the consequences for each action, estimate the probability of the occurrence of the consequences and the risk of that consequence for the patient then compare the overall results.

Actions may have one or more consequences. These consequences are the effect of the action. For example, the consequences of the action to administer morphine for pain are 1) pain relief, 2) relaxation of the pt., 3) depression of respiration, 4) possible allergies, 5) decreased peristalsis, 6) hypotension.

Consequences may occur frequently or infrequently. Estimating the occurrence of consequences is called the probability of appearance (the likelihood or chance of appearing). Probability may be calculated in percentages, as we see in the key below:

high	Very likely to occur
questionable	50-50 chance of occurring
none	Unlikely to occur

Consequences that are unsafe are risks for the patient, that is, they threaten the patient's life, mental and/or physical health. There are other consequences which are considered risky because they violate social norms, e.g., wasting time, violating policy, etc.

Risk may be estimated in percentages, as shown in the following key:

high	Threatens the patient
mod	Can cause serious harm
low	Can cause some harm
none	Causes no harm

When calculating which action is the best, 1) mark all the consequences for the actions that are desirable outcomes for the patient with an asterisk (*), 2) circle all the probabilities that are 100% or are the highest value estimated, 3) circle the lowest values estimated for the risk that that consequence places on the patient. The alternative action that has the most consequences that are desired outcomes and the highest probability of occurrence as well as the lowest risk is the action of choice.

EXAMPLE OF SELECTING A NURSING ACTION
Nursing diagnosis: Dehydration due to fluid loss and decrease in fluid intake.

Outcome: Reduce dehydration by increasing fluid intake in amounts to balance fluid loss.

Alternative actions	*	Consequences of each action	Probability	Risk
1) Offer 100 ml. /hour o.o. while awake	*	Oral intake increased	high	none
	*	Fluid balance restored	high	none
2) Provides I.V. fluids @ 100 ml./hr. as per Dr.'s orders	*	Fluid balance restored	high	none
		Infection introduced	questionable	low
		Reduction of mobility	low	low
		Potential reaction to I.V. fluid	low	low
3) Offer extra fluids at meals only	*	Oral intake increased	high	none
	*	Fluid balance restored	high	none
		Excessive periodic intake	low	low
Ideal action =	*	Desired consequences	high	none

ALTERNATIVE ACTIONS	X	CONSEQUENCES	PROBABILITY	RISK
Administer penicillin		Alleviate infection.	High	None
(no known history of allergic		Reduce fever.	High	None
response).		Anaphylactic shock.	Low	Low
		Allergic response.	Low	Low
Administer morphine.		Pain relief.	High	None
		Pt. will relax.	High	None
		respirations.	High	High
		Allergic response.	Low	Low
		peristalsis.	Low	Low
		Hypotension.	Questionable	Moderate

PROBLEM Inability to cough & deep breathe due to post-op pain in abdomen

GOAL OF CARE Relieve pain so pt. is able to cough & deep breathe

ALTERNATIVE ACTIONS	X	CONSEQUENCES	PROBABILITY	RISK
1. Administer morphine		Pain relief	High	None
		Pt. able to deep breathe & cough	High	None
		↓ respirations	High	High
		Allergic response	Low	Low
		Hypotension	Questionable	Moderate
2. Reposition		Some relief of pain	High	High
		Enjoys attention	High	None
		Still cannot cough or deep breathe	High	High
3. Splint abdomen with pillow		↓ pain	High	None
		Coughs & deep breathes	High	None
		Enjoys attention	High	None
		Still has pain at times	High	High

Appendix B

Simulation Using Strategies

Adapted from Knor (1980). Used by permission.

INSTRUCTIONS TO STUDENTS

INTRODUCTION

This is an exercise in making nursing decisions. It represents a real-life situation in which you are required to diagnose a number of patient problems, implement appropriate courses of nursing action, and evaluate the care given.

MATERIALS

The materials that you will use in completing the exercise are a/an:

a) EXERCISE BOOKLET

b) ANSWER BOOKLET

c) SPECIAL MARKER

d) PENCIL

e) ERASER

DEFINITIONS

There are several terms you must be familiar with before you are ready to begin.

Cue. A cue refers to any information such as a sign, symptom, medical diagnosis, medical treatment regimen, laboratory result, or socioeconomic state that the nurse uses when making nursing decisions.

Patient Problem. A patient problem is a statement which summarizes the behavioral response of an individual to a health or an illness problem including the contributing or causal factors. An example could be pain due to abdominal distention. The patient problems may be actual or potential. An actual problem is one which exists and is supported by assessment data; a potential problem is one which is not present. It may arise because of the patient's health or illness problem, because of the diagnostic or therapeutic regimen, or because some preventive measures have not been taken.

Nursing Diagnosis. A nursing diagnosis is a statement of a present or potential patient problem that the nurse is qualified and licensed to treat. An example is noted under patient problem.

Cue Interpretation Weight. A cue interpretation weight describes how a cue relates to an identified patient problem. A cue interpretation weight can be positive, negative, or noncontributory. Designated by a "+" sign, a cue weight is positive if, from your knowledge, the cue usually indicates a particular patient problem. Designated by a "-" sign, a cue weight is negative if, from your knowledge, the cue usually indicates a particular patient problem should not be present. Designated by a "O" sign, a cue weight is noncontributory if the cue has no relationship to an identified patient problem.

Nursing Action. Nursing action refers to the care that the nurse can implement to resolve diagnosed patient problem.

Item. The word "Item" refers to the number given to each approach or activity within the exercise.

INSTRUCTIONS FOR USE OF SIMULATION WITH STRATEGIES

1. Take the EXERCISE BOOKLET and begin reading the "Introductory Information". There you will find several cues about the state of the patient. Read and follow any instructions that follow immediately after.

2. Proceed to Section A. In Section A you will find a list of several initial approaches you can take in the care of this patient. You must decide on an initial approach; the cues found in the "Introductory Information" and any hypothesized nursing diagnoses should assist you in the task.

3. When you have selected your initial approach, take the ANSWER BOOKLET and find the corresponding item. Then, using your special marker, gently rub the space adjacent to the item. Follow the instructions which appear in the space.

4. At this time use your pencil to mark 1 to the left of the first item selected in A. This begins the record of the sequence in which you work through the exercise. As you begin each new section, record the next number sequentially, eg. if you were to go to Section C from A, you would record 2 to the left of the first C item selected, etc.

5. The initial approach will lead you to subsequent sections. These later sections will contain lists of activities you might want to implement. From the lists, select those activities you think are necessary in light of what you know about the patient. The results of each of the activities that you choose will reveal further cues, or will direct you to another section of the exercise. Continue working through the exercise until you reach the statement END OF EXERCISE in either the EXERCISE BOOKLET or the ANSWER BOOKLET.

6. When you enter the section on nursing actions, you are required to use the nursing action decision matrix to aid you in selecting the most appropriate action among the possible alternatives available in that section which you consider for each goal. Use as many matrix sheets as necessary for each diagnosis and goal. Refer to the attached instructions for completion of the decision matrix.

7. Throughout the exercise a record of cues acquired, activities selected, nursing diagnoses, cue interpretation weights, and nursing actions will emerge. Instructions for recording nursing diagnoses & goals and selecting nursing actions will be provided throughout the exercise.

The sections are arranged randomly; thus you will skip back and forth as you work through the exercise.

*** * * COMMENCE EXERCISE * * ***

INSTRUCTIONS FOR COMPLETING NURSING ACTIONS DECISION MATRIX

1. Use one or more matrix sheets for each goal.

2. Record the goal in the space indicated at the top of the matrix sheet. The goal should be recorded in behavioural terms indicating the specifics which will lead to the resolution of the patient problem.

3. Select all actions listed in the section that you consider possible solutions to the patient's problem.

4. List the selected actions in the column "Alternative actions". Leave 4 - 6 lines between each action.

5. List all consequences of the action for the patient in the column "Consequences". Number each consequence. In the column immediately adjacent to the left place a "✓" or "*" beside each positive or good consequence of that action.

6. Next, calculate the probability or chance that each consequence has of occurring for that action and that patient. Use the key below:

   Probability estimate:

High	Very likely to occur
Questionable	50-50 chance to occur
Low	Highly unlikely to occur

7. Then, calculate the risk of the consequence if the action is implemented. Consider the chance of occurrence when calculating the risk. Use the key below:

   Risk estimate:

High	Threatens the patient
Moderate	Can cause serious harm
Low	Can cause some harm
None	Causes no harm

8. Finally, assess points for good consequences with high probability (1 pt. each) and low risk (1 pt. each). The action rating the greatest number of points is the most appropriate action for this patient.

9. Rank the actions according to the number of points. You may find that you include some subjective feelings in the selection.

SIMULATION #1 USING STRATEGIES

EXERCISE BOOKLET

INTRODUCTORY INFORMATION

You are working the day shift and are assigned to care for Mrs. Andrew, age 60. At the change of shift you learn that Mrs. Andrew was admitted yesterday (January 23) with a hiatus hernia. She is scheduled to have a hiatus hernia repair at 1330 today. Blood work was done and specimen was sent for urinalysis yesterday. Her abdominal shave prep was done last evening and she was given a Dulcolax suppository at h.s. She refused h.s. sedation. At 0615 Mrs. Andrew ate a clear fluid breakfast, and was then placed on NPO. She will have an ECG done this a.m. She requires a N/G tube pre-operatively and her pre-operative medication is due at 1230. It is now 0750.

Record any cues into the "Cue" column of the ANSWER BOOKLET.

Record any possible nursing diagnoses into the appropriate spaces at the top of the "Nursing Diagnosis" columns of the ANSWER BOOKLET. If there is more than one diagnosis, record them in order of priority.

Proceed to Section A.

Section A.

Choose ONLY ONE initial approach.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Proceed as directed in the ANSWER BOOKLET.

A1. Complete a physical assessment.

A2. Read the Kardex.

A3. Read the chart.

A4. Interview the patient.

A5. Initiate care.

A6. Consult the team leader.

Section B.

At this time record any possible nursing diagnoses (in the order of priority) in the appropriate spaces at the top of the "Nursing Diagnosis" columns of the ANSWER BOOKLET. (Nursing Diagnoses already identified and that still exist do NOT have to be recorded again). Revise any existing nursing diagnoses as necessary.

Then record the cue interpretation weightings in the spaces corresponding to the "Cue" lines and the "Nursing Diagnosis" columns.

Given what you now know, select ONLY ONE approach.

Use the special marker to gently rub the space adjacent to the selected item in the ANSWER BOOKLET.

Then proceed as directed in the ANSWER BOOKLET.

B1. Read the Kardex.

B2. Read the chart.

B3. Interview the patient.

B4. Initiate care.

B5. Consult the team leader.

Section C.

At this time select AS MANY items as needed to provide necessary information about the patient.

As you select each item, use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed, proceed to Section K, unless otherwise directed in the ANSWER BOOKLET.

C1. Vital sign pattern.

C2. Medical orders.

C3. Ability to rest.

C4. Emotional status prior to surgery.

C5. Pre-operative lab. tests.

C6. Medical diagnosis.

C7. Medical treatment regimen.

C8. History of dyspnea.

C9. Smoking habit.

C10. History of dizziness and weakness.

C11. History of cough.

C12. History of eating habits.

C13. History of problems related to eating or drinking.

C14. History of assistance needed with meals.

C15. Amount of usual fluid intake per day.

C16. Routines before and after meals.

C17. Food and fluid likes.

C18. Food and fluid dislikes.

C19. Weight and Height.

C20. Change in weight within the last three months.

C21. Usual alcohol intake.

C22. Medication taken at home.

C23. Usual bowel habits.

C24. Bowel elimination aids.

C25. Usual urinary habits.

C26. Urinary discomforts.

C27. Interests and hobbies.

C28. Specific exercise program.

C29. Adequate energy to accomplish daily activities.

C30. Activity restrictions.

C31. Hours of sleep.

C32. Quality of sleep.

C33. Requirements for sleep.

C34. Visual ability.

C35. Hearing ability.

C36. Hand dominance.

C37. Usual bathing habits.

C38. Assistance bathing.

C39. Oral hygienic needs.

C40. Special makeup, lotions.

C41. Allergies.

C42. Reason for hospitalization.

C43. History of present illness.

C44. Family history.

C45. Expected length of hospitalization.

C46. Previous surgeries or hospitalization.

C47. What could be done to improve hospital stay?

C48. Occupation.

C49. Effect of health/illness problem on way of life.

C50. Effect of health/illness problem on future.

C51. Home responsibilities for which assistance is required.

C52. Most significant person(s).

C53. Visitors expected in hospital.

C54. Religious beliefs and practices that influence care.

C55. Feelings about strange environments.

C56. Feelings about accepting help from others.

C57. How does the patient cope with stressful events in her life?

C58. Has there been a recent stressful event that may affect hospitalization?

C59. Ability to communicate.

C60. Language of choice.

C61. Date of last Pap test.

C62. Abnormal Pap test.

C63. Vaginal discharge.

C64. Frequency of self breast check.

C65. Number of pregnancies.

C66. Physio Progress Note.

C67. Has the consent for surgery been signed?

C68. Pre-operative Chest X-ray.

Section D.

At this time record any possible nursing diagnoses (in the order of priority) in the appropriate spaces at the top of the "Nursing Diagnosis" columns of the ANSWER BOOKLET. (Nursing diagnoses already identified and that still exist do NOT have to be recorded again.)

Revise any existing nursing diagnoses as necessary.

Then record the cue interpretation weightings in the spaces corresponding to the "Cue" lines and the "Nursing Diagnosis" columns.

Given what you now know, select ONLY ONE approach.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Then proceed as directed in the ANSWER BOOKLET.

D1. Read the Kardex.

D2. Read the chart.

D3. Initiate care.

D4. Consult the team leader.

Section E.

It is now 0930.

For each nursing diagnosis listed record a goal of patient care in the space immediately below that nursing diagnosis.

Record each goal at the top of a decision matrix sheet. Then select the nursing actions that are appropriate to achieving the goal and record them on the decision matrix sheet.

Identify the most appropriate actions using the guidelines for selection.

Complete one decision matrix sheet for each goal of patient care.

Record the selected action(s) in the space corresponding to the "Cue" line and the appropriate "Nursing Diagnosis" column in the ANSWER BOOKLET. Use the special marker to gently rub the "Cue" space adjacent to the selected item and note the result of the nursing actions.

Select and record all other actions in the order that you would judge would be necessary to provide total care for the patient, into the spaces corresponding to the selected item and the Nursing Diagnosis column. Use the special marker to gently rub the "Cue" space adjacent to the selected item and note the result of the nursing action.

When the result of the nursing action shows that a patient problem has been resolved, draw a bold line in the space in the appropriate "Nursing Diagnosis" column.

When the result of the nursing action shows that a patient problem has NOT been resolved, make another appropriate selection in this section.

If another appropriate item is NOT AVAILABLE proceed as directed below, unless otherwise stated in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed proceed to Section F.

E1. Allow the patient to verbalize her fears about her surgery.

E2. Tell the patient not to worry; everything will be fine.

E3. Reassure the patient that the ECG is routine for anyone who has had a heart attack and that there is probably nothing to worry about.

E4. Reassure the patient that the ECG was done as a precautionary measure. It will give the doctor a good indication of the state of her heart, which will assist him with her medical care.

E5. Explain to your patient the pre-operative care she will receive. In addition, explain what she will experience in the operating room immediately before surgery, and in the recovery room and on the ward post-operatively.

E6. Explain and demonstrate deep breathing and coughing, turning, and relaxing and contracting leg exercises.

E7. Ask the patient to demonstrate deep breathing and coughing, turning, and relaxing and contracting leg exercises.

E8. Ask the patient to take a tub bath.

E9. Ask the patient to take a shower.

E10. Encourage the patient to do her own mouth care.

E11. Ask the patient to think of any more questions she may have, and tell her you will talk about them when you are doing the Phisohex abdominal scrub.

E12. Ask the patient if she has any other concerns at present.

Section F.

It is now 1015.

At this time record any possible nursing diagnoses (in the order of priority) in the appropriate spaces at the top of the "Nursing Diagnosis" columns of the ANSWER BOOKLET. (Nursing diagnoses already identified and that still exist do NOT have to be recorded again.)

Revise any existing nursing diagnoses as necessary.

Then record the cue interpretation weightings in the spaces corresponding to the "Cue" lines and the "Nursing Diagnosis" columns.

Given what you now know, select ONLY ONE approach.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Then proceed as directed in the ANSWER BOOKLET.

F1. Complete a physical assessment.

F2. Read the Kardex.

F3. Read the chart.

F4. Interview the patient.

F5. Continue with care.

F6. Consult the team leader.

Section G.

At this time select AS MANY items as needed to provide necessary information about the patient.

As you select each item, use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed proceed as directed in the ANSWER BOOKLET.

G1. Medications and times of administration.

G2. Treatments and times.

G3. Identified patient problems and nursing approaches.

G4. Activity level.

G5. Side Rails.

G6. Hygienic needs.

G7. Diet and Fluids.

G8. Feeding.

G9. Intake and Output.

G10. Mental Status.

G11. Bowel and bladder care.

G12. Frequency of vital signs.

G13. Physical traits.

G14. Appliances.

G15. Prosthesis.

G16. Therapy.

G17. Allergies.

Section H.

At this time select AS MANY items as needed in your interview with the patient.

As you select each item, use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed proceed to Section D.

H1. How is she generally feeling?

H2. How well did she sleep?

H3. Has the doctor discussed the surgery with her?

H4. Has she brought up any sputum?

H5. Has she had any shortness of breath?

H6. Does she have an appetite?

H7. Has she ever had surgery?

H8. Does she know what will happen to her before, during and after surgery?

H9. Would she prefer to have her wedding band removed or taped?

H10. Does she know how to deep breathe and cough, turn, and do relaxing and contracting leg exercises?

H11. Will someone visit following her surgery?

H12. Does she have a special soap or lotion she would like used during her bath?

H13. What are her major concerns at present?

H14. Would she prefer a shower or a tub bath?

Section I.

Just as you are about to begin, your patient is taken to the lab. for an ECG. She returns at 0915.

Given what you now know, select ONLY ONE approach.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Then proceed as directed in the ANSWER BOOKLET.

I1. Continue with physical assessment.

I2. Continue reading the Kardex.

I3. Continue reading the chart.

I4. Continue with the interview.

I5. Continue with care.

I6. Consult the team leader.

Section J.

At this time select AS MANY items as needed when consulting the team leader.

As you select each item, use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed you will have reached the END OF THE EXERCISE.

J1. Report progress of pre-operative preparation.

J2. What are the results of the ECG?

J3. Recommend that the doctor be informed of the patient's fear due to her previous coronary, and that he visit her pre-operatively.

J4. What size of N/G tube is routinely used?

J5. Is there special O.R. clothing?

J6. Are there special procedures for handling valuables?

J7. Can wedding bands be taped?

Section K.

At this time record any possible nursing diagnoses (in the order of priority) in the appropriate spaces at the top of the "Nursing Diagnosis" columns of the ANSWER BOOKLET. (Nursing diagnoses already identified and that still exist do NOT have to be recorded again).

Revise existing nursing diagnoses as necessary.

Given what you now know, select ONLY ONE approach.

Then record the cue interpretation weightings in the spaces corresponding to the "Cue" lines and the "Nursing Diagnosis" columns.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Then proceed as directed in the ANSWER BOOKLET.

K1. Complete a physical assessment.

K2. Read the Kardex.

K3. Interview the patient.

K4. Initiate care.

K5. Consult the team leader.

Section L.

At this time select AS MANY items as needed in the order in which you would observe the patient.

As you select each item, use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed proceed to Section B.

L1. Rate, rhythm and depth of respiration.

L2. Pattern and character of respirations.

L3. Chest symmetry and general chest expansion.

L4. Duration of inspiration versus expiration.

L5. Presence and character of cough.

L6. Body temperature.

L7. Temperature of extremities.

L8. Color of skin.

L9. Color of lips.

L10. Color of nailbeds.

L11. Color of upper extremities.

L12. Color of lower extremities.

L13. Rate, rhythm and quality of radial pulse.

L14. Quality of pedal pulses.

L15. Rate, rhythm and quality of apical beat.

L16. Blood pressure.

L17. Height.

L18. Weight.

L19. Body build.

L20. Lips.

L21. Tongue.

L22. Gums.

L23. Teeth.

L24. Breath.

L25. Mucous membranes.

L26. Palate.

L27. Pharynx.

L28. Oral fluid intake.

L29. Intravenous fluid intake.

L30. Intravenous rate and flow.

L31. Type and amount of food intake.

L32. Abdomen for scars, striae, rashes and lesions, dryness, sweating or oiliness.

L33. Umbilicus.

L34. Contour and symmetry of abdomen.

L35. Frequency and character of bowel sounds.

L36. Presence of discharge.

L37. Stool color, odor, consistency, frequency and control.

L38. Urine color, odor, amount, clarity and continency.

L39. Level of consciousness.

L40. Level of responsiveness.

L41. Pupillary reaction.

L42. Strength and quality of movement in upper and lower extremities.

L43. Range of motion.

L44. Coordination.

L45. Posture and position.

L46. Presence of inflammation.

L47. Condition and symmetry of eyes, and presence of discharge.

L48. Patency of external ear, and presence of discharge.

L49. Patency of nostrils, and presence of discharge.

L50. Skin turgor, vascularity, texture, cleanliness, lesions and discharges.

L51. Hair texture and cleanliness.

L52. Facial expressions.

L53. Quality, quantity and organization of speech.

L54. Mood and manner.

L55. Posture and motor behavior.

L56. Grooming and dress.

L57. Symmetry, size, contour and appearance of breasts.

L58. Nipple size and shape, and presence of discharge.

Appendix C

Control Simulation

Adapted from Knor (1980). Used by permission.

INSTRUCTIONS TO STUDENTS

INTRODUCTION

This is an exercise in making nursing decisions. It represents a real-life situation in which you are required to diagnose a number of patient problems, implement appropriate courses of nursing action, and evaluate the care given.

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Patient Problem. A patient problem is a statement which summarizes the behavioral response of an individual to a health or an illness problem including the contributing or causal factors. An example could be pain due to abdominal distention. The patient problems may be actual or potential. An actual problem is one which exists and is supported by assessment data; a potential problem is one which is not present. It may arise because of the patient's health or illness problem, because of the diagnostic or therapeutic regimen, or because some preventive measures have not been taken.

Nursing Diagnosis. A nursing diagnosis is a statement of a present or potential patient problem that the nurse is qualified and licensed to treat. An example is noted under patient problem.

Cue Interpretation Weight. A cue interpretation weight describes how a cue relates to an identified patient problem. A cue interpretation weight can be positive, negative, or noncontributory. Designated by a "+" sign, a cue weight is positive if, from your knowledge, the cue usually indicates a particular patient problem. Designated by a "-" sign, a cue weight is negative if, from your knowledge, the cue usually indicates a particular patient problem should not be present. Designated by a "O" sign, a cue weight is noncontributory if the cue has no relationship to an identified patient problem.

Nursing Action. Nursing action refers to the care that the nurse can implement to resolve diagnosed patient problem.

Item. The word "Item" refers to the number given to each approach or activity within the exercise.

INSTRUCTIONS FOR USE OF SIMULATION

1. Take the EXERCISE BOOKLET and begin reading the "Introductory Information". There you will find several cues about the state of the patient. Read and follow any instructions that follow immediately after.

2. Proceed to Section A. In Section A you will find a list of several initial approaches you can take in the care of this patient. You must decide on an initial approach; the cues found in the "Introductory Information" and any hypothesized nursing diagnoses should assist you in the task.

3. When you have selected your initial approach, take the ANSWER BOOKLET and find the corresponding item. Then, using your special marker, gently rub the space adjacent to the item. Follow the instructions which appear in the space.

4. At this time use your pencil to mark 1 to the left of the first item selected in A. This begins the record of the sequence in which you work through the exercise. As you begin each new section, record the next number sequentially, eg. if you were to go to Section C from A, you would record 2 to the left of the first C item selected, etc.

5. The initial approach will lead you to subsequent sections. These later sections will contain lists of activities you might want to implement. From the lists, select those activities you think are necessary in light of what you know about the patient. The results of each of the activities that you choose will reveal further cues, or will direct you to another section of the exercise. Continue working through the exercise until you reach the statement END OF EXERCISE in either the EXERCISE BOOKLET or the ANSWER BOOKLET.

6. Throughout the exercise a record of cues acquired, activities selected, nursing diagnoses, cue interpretation weights, and nursing actions will emerge. Instructions for recording nursing diagnoses & goals & selecting nursing actions will be provided throughout the exercise.

The sections are arranged randomly; thus you will skip back and forth as you work through the exercise.

*** * * COMMENCE EXERCISE * * ***

SIMULATION #1

EXERCISE BOOKLET

INTRODUCTORY INFORMATION

You are working the day shift and are assigned to care for Mrs. Andrew, age 60. At the change of shift you learn that Mrs. Andrew was admitted yesterday (January 23) with a hiatus hernia. She is scheduled to have a hiatus hernia repair at 1330 today. Blood work was done and specimen was sent for urinalysis yesterday. Her abdominal shave prep was done last evening and she was given a Dulcolax suppository at h.s. She refused h.s. sedation. At 0615 Mrs. Andrew ate a clear fluid breakfast, and was then placed on NPO. She will have an ECG done this a.m. She requires a N/G tube pre-operatively and her pre-operative medication is due at 1230. It is now 0750.

Record any cues into the "Cue" column of the ANSWER BOOKLET. Proceed to Section A.

Section A.

Choose ONLY ONE initial approach.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Then proceed as directed in the ANSWER BOOKLET.

A1. Complete a physical assessment.

A2. Read the Kardex.

A3. Read the chart.

A4. Interview the patient.

A5. Initiate care.

A6. Consult the team leader.

Section B.

At this time record any possible nursing diagnoses (in the order of priority) in the appropriate spaces at the top of the "Nursing Diagnosis" columns of the ANSWER BOOKLET. (Nursing diagnoses already identified and that still exist do NOT have to be recorded again).

Then record the cue interpretation weightings in the spaces corresponding to the "Cue" lines and the "Nursing Diagnosis" columns.

Given what you now know, select ONLY ONE approach.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Then proceed as directed in the ANSWER BOOKLET.

B1. Read the Kardex.

B2. Read the chart.

B3. Interview the patient.

B4. Initiate care.

B5. Consult the team leader.

Section C.

At this time select AS MANY items as needed to provide necessary information about the patient.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed proceed to Section K, unless otherwise directed in the ANSWER BOOKLET.

C1. Vital sign pattern.

C2. Medical orders.

C3. Ability to rest.

C4. Emotional status prior to surgery.

C5. Pre-operative lab. tests.

C6. Medical diagnosis.

C7. Medical treatment regimen.

C8. History of dyspnea.

C9. Smoking habit.

C10. History of dizziness and weakness.

C11. History of cough.

C12. History of eating habits.

C13. History of problems related to eating or drinking.

C14. History of assistance needed with meals.

C15. Amount of usual fluid intake per day.

C16. Routines before and after meals.

C17. Food and fluid likes.

C18. Food and fluid dislikes.

C19. Weight and Height.

C20. Change in weight within the last three months.

C21. Usual alcohol intake.

C22. Medication taken at home.

C23. Usual bowel habits.

C24. Bowel elimination aids.

C25. Usual urinary habits.

C26. Urinary discomforts.

C27. Interests and hobbies.

C28. Specific exercise program.

C29. Adequate energy to accomplish daily activities.

C30. Activity restrictions.

C31. Hours of sleep.

C32. Quality of sleep.

C33. Requirements for sleep.

C34. Visual ability.

C35. Hearing ability.

C36. Hand dominance.

C37. Usual bathing habits.

C38. Assistance bathing.

C39. Oral hygienic needs.

C40. Special makeup, lotions.

C41. Allergies.

C42. Reason for hospitalization.

C43. History of present illness.

C44. Family history.

C45. Expected length of hospitalization.

C46. Previous surgeries or hospitalization.

C47. What could be done to improve hospital stay?

C48. Occupation.

C49. Effect of health/illness problem on way of life.

C50. Effect of health/illness problem on future.

C51. Home responsibilities for which assistance is required.

C52. Most significant person(s).

C53. Visitors expected in hospital.

C54. Religious beliefs and practices that influence care.

C55. Feelings about strange environments.

C56. Feelings about accepting help from others.

C57. How does the patient cope with stressful events in her life?

C58. Has there been a recent stressful event that may affect hospitalization?

C59. Ability to communicate.

C60. Language of choice.

C61. Date of last Pap test.

C62. Abnormal Pap test.

C63. Vaginal discharge.

C64. Frequency of self breast check.

C65. Number of pregnancies.

C66. Physio Progress Note.

C67. Has the consent for surgery been signed?

C68. Pre-operative Chest X-ray.

Section D.

At this time record any possible nursing diagnoses (in the order of priority) in the appropriate spaces at the top of the "Nursing Diagnosis" columns of the ANSWER BOOKLET. (Nursing diagnoses already identified and that still exist do NOT have to be recorded again.

Then record the cue interpretation weightings in the spaces corresponding to the "Cue" lines and the "Nursing Diagnosis" columns.

Given what you now know, select ONLY ONE approach.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Then proceed as directed in the ANSWER BOOKLET.

D1. Read the Kardex.

D2. Read the chart.

D3. Initiate care.

D4. Consult the team leader.

Section E.

It is now 0930.

At this time record any possible nursing diagnoses (in the order of priority) in the appropriate spaces at the top of the "Nursing Diagnosis" columns of the ANSWER BOOKLET. (Nursing diagnoses already identified and that still exist do NOT have to be recorded again).

Then record the cue interpretation weightings in the spaces corresponding to the "Cue" lines and the "Nursing Diagnosis" columns.

For each nursing diagnosis listed record a goal of patient care in the space immediately below that nursing diagnosis.

Now select AS MANY items as necessary in the order that you would provide care for the patient.

Record the selected action(s) in the "Nursing Diagnosis" column adjacent to the item number. Use the special marker to gently rub the "Cue" space adjacent to the selected items in the ANSWER BOOKLET.

When the result of your nursing action show(s) that a patient problem has been resolved, draw a bold line in the space in the appropriate "Nursing Diagnosis" column.

When the result of your nursing action show(s) that a patient problem has NOT been resolved, make another appropriate selection in this section. If another appropriate item is NOT AVAILABLE proceed as directed below, unless otherwise stated in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed proceed to Section F.

E1. Allow the patient to verbalize her fears about her surgery.

E2. Tell the patient not to worry; everything will be fine.

E3. Reassure the patient that the ECG is routine for anyone who has had a heart attack and that there is probably nothing to worry about.

E4. Reassure the patient that the ECG was done as a precautionary measure. It will give the doctor a good indication of the state of her heart, which will assist him with medical care.

E5. Explain to your patient the pre-operative care she will receive. In addition, explain what she will experience in the operating room immediately before surgery, and in the recovery room and on the ward post-operatively.

E6. Explain and demonstrate deep breathing and coughing, turning, and relaxing and contracting leg exercises.

E7. Ask the patient to demonstrate deep breathing and coughing, turning, and relaxing and contracting leg exercises.

E8. Ask the patient to take a tub bath.

E9. Ask the patient to take a shower.

E10. Encourage the patient to do her own mouth care.

E11. Ask the patient to think of any more questions she may have, and tell her you will talk about them when you are doing the Phisohex abdominal scrub.

E12. Ask the patient if she has any other concerns at present.

Section F.

It is now 1015.

At this time record any possible nursing diagnoses (in the order of priority) in the appropriate spaces at the top of the "Nursing Diagnosis" columns of the ANSWER BOOKLET. (Nursing diagnoses already identified and that still exist do NOT have to be recorded again.)

Then record the cue interpretation weightings in the spaces corresponding to the "Cue" lines and the "Nursing Diagnosis" columns.

Given what you now know, select ONLY ONE approach.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Then proceed as directed in the ANSWER BOOKLET.

F1. Complete a physical assessment.

F2. Read the Kardex.

F3. Read the chart.

F4. Interview the patient.

F5. Continue with care.

F6. Consult the team leader.

Section G.

At this time select AS MANY items as needed to provide necessary information about the patient.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed proceed as directed in the ANSWER BOOKLET.

G1. Medications and times of administration.

G2. Treatments and times.

G3. Identified patient problems and nursing approaches.

G4. Activity level.

G5. Side Rails.

G6. Hygienic needs.

G7. Diet and Fluids.

G8. Feeding.

G9. Intake and Output.

G10. Mental Status.

G11. Bowel and bladder care.

G12. Frequency of vital signs.

G13. Physical traits.

G14. Appliances.

G15. Prosthesis.

G16. Therapy.

G17. Allergies.

Section H.

At this time select AS MANY items as needed in your interview with the patient.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed proceed to Section D.

H1. How is she generally feeling?

H2. How well did she sleep?

H3. Has the doctor discussed the surgery with her?

H4. Has she brought up any sputum?

H5. Has she had any shortness of breath?

H6. Does she have an appetite?

H7. Has she ever had surgery?

H8. Does she know what will happen to her before, during and after surgery?

H9. Would she prefer to have her wedding band removed or taped?

H10. Does she know how to deep breathe and cough, turn, and do relaxing and contracting leg exercises?

H11. Will someone visit following her surgery?

H12. Does she have a special soap or lotion she would like used during her bath?

H13. What are her major concerns at present?

H14. Would she prefer a shower or a tub bath?

Section I.

Just as you are about to begin, your patient is taken to the lab. for an ECG. She returns at 0915.

Given what you now know, select ONLY ONE approach.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Then proceed as directed in the ANSWER BOOKLET.

I1. Continue with physical assessment.

I2. Continue reading the Kardex.

I3. Continue reading the chart.

I4. Continue with the interview.

I5. Continue with care.

I6. Consult the team leader.

Section J.

At this time select AS MANY items as needed when consulting the team leader.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed you will have reached the END OF THE EXERCISE.

J1. Report progress of pre-operative preparation.

J2. What are the results of the ECG?

J3. Recommend that the doctor be informed of the patient's fear due to her previous coronary, and that he visit her pre-operatively.

J4. What size of N/G tube is routinely used?

J5. Is there special O.R. clothing?

J6. Are there special procedures for handling valuables?

J7. Can wedding bands be taped?

Section K.

Given what you now know, select ONLY ONE approach.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

Then proceed as directed in the ANSWER BOOKLET.

K1. Complete a physical assessment.

K2. Read the Kardex.

K3. Interview the patient.

K4. Initiate care.

K5. Consult the team leader.

Section L.

At this time select AS MANY items as needed in the order in which you would observe the patient.

Use the special marker to gently rub the "Cue" space adjacent to the selected item in the ANSWER BOOKLET.

When you have finished selecting AS MANY items as needed proceed to Section B.

L1. Rate, rhythm and depth of respiration.

L2. Pattern and character of respirations.

L3. Chest symmetry and general chest expansion.

L4. Duration of inspiration versus expiration.

L5. Presence and character of cough.

L6. Body temperature.

L7. Temperature of extremities.

L8. Color of skin.

L9. Color of lips.

L10. Color of nailbeds.

L11. Color of upper extremities.

L12. Color of lower extremities.

L13. Rate, rhythm and quality of radial pulse.

L14. Quality of pedal pulses.

L15. Rate, rhythm and quality of apical beat.

L16. Blood pressure.

L17. Height.

L18. Weight.

L19. Body build.

L20. Lips.

L21. Tongue.

L22. Gums.

L23. Teeth.

L24. Breath.

L25. Mucous membranes.

L26. Palate.

L27. Pharynx.

L28. Oral fluid intake.

L29. Intravenous fluid intake.

L30. Intravenous rate and flow.

L31. Type and amount of food intake.

L32. Abdomen for scars, striae, rashes and lesions, dryness, sweating or oiliness.

L33. Umbilicus.

L34. Contour and symmetry of abdomen.

L35. Frequency and character of bowel sounds.

L36. Presence of discharge.

L37. Stool color, odor, consistency, frequency and control.

L38. Urine color, odor, amount, clarity and continency.

L39. Level of consciousness.

L40. Level of responsiveness.

L41. Pupillary reaction.

L42. Strength and quality of movement in upper and lower extremities.

L43. Range of motion.

L44. Coordination.

L45. Posture and position.

L46. Presence of inflammation.

L47. Condition and symmetry of eyes, and presence of discharge.

L48. Patency of external ear, and presence of discharge.

L49. Patency of nostrils, and presence of discharge.

L50. Skin turgor, vascularity, texture, cleanliness, lesions and discharges.

L51. Hair texture and cleanliness.

L52. Facial expressions.

L53. Quality, quantity and organization of speech.

L54. Mood and manner.

L55. Posture and motor behavior.

L56. Grooming and dress.

L57. Symmetry, size, contour and appearance of breasts.

L58. Nipple size and shape, and presence of discharge.

Appendix D

Fact and Answer Booklet

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FACT & ANSWER BOOKLET

SIMULATION # 1

ITEM	CUES	NURSING DIAGNOSIS: Label: Actual Problem - A Potential Problem - B					
		GOAL: (State in behavioural terms)					
A1.	You find your patient resting with closed eyes.						
	Make another selection in Section A.						
A2.	Proceed to Section G. When you have finished						
	reading the Kardex RETURN to Section A and make						
	another selection.						
A3.	Proceed to Section C.						
A4.	You find your patient resting with closed eyes.						
	Make another selection in Section A.						

ITEM	CUES						
A5.	You find your patient resting with closed eyes.						
	Make another selection in Section A.						
A6.	The team leader is off the ward. Make another						
	selection in Section A.						
B1.	Proceed to Section G. When you have finished read-						
	ing the Kardex RETURN to Section B and make						
	another selection.						
B2.	Proceed to Section C. When you have finished read-						
	ing the Chart RETURN to Section B and make						
	another selection.						
B3.	Proceed to Section H.						
B4.	You find your patient looking worried and tense.						
	Make another selection in Section B.						
B5.	The team leader is not available. Make another						
	selection in Section B.						
C1.	T: 36.6-37.2; P: 72-84; R: 18-20; B.P.: 140/80.						
C2.	Seconal 100 mg q.h.s.						
C3.	Awoke x 1 during night.						
C4.	Appears tense. Frequently questioning whether a						
	heart attack of a year and a half ago will cause						
	problems.						
C5.	Hgb-12.9; Hematocrit-38.8; W.B.C.-13.9 ($x10^3$);						
	R.B.C.-4.12 ($x10^6$); BUN-18; Bilirubin-0.3;						
	ESR-28 mm/hr.						
C6.	Hiatus Hernia.						
C7.	Hiatus Hernia Repair.						
C8.	None.						

ITEM	CUES						
C9.	Smokes one package per day.						
C10.	None.						
C11.	None.						
C12.	Has been avoiding spicy, fried foods.						
C13.	Has always had heartburn after meals, but this has						
	been getting much worse over the last six months.						
C14.	None.						
C15.	About eight glasses.						
C16.	Nothing specific.						
C17.	Most foods.						
C18.	Spicy, fried foods.						
C19.	Wt. - 65 kg; Ht. - 170 cm.						
C20.	None.						
C21.	Occasional social drink.						
C22.	Intrafer i daily.						
C23.	B.M. q2days.						
C24.	None.						
C25.	Nothing unusual.						
C26.	None.						
C27.	Bowling and needle crafts.						
C28.	Walks five blocks daily.						
C29.	Yes.						
C30.	None.						
C31.	Usually 2315 to 0715.						
C32.	Good.						
C33.	Nothing special.						
C34.	Requires glasses for reading.						

ITEM	CUES						
C35.	Normal.						
C36.	Right.						
C37.	Rub every 2 days.						
C38.	None.						
C39.	Upper and lower dentures. Brought own denture brush						
	and cleaner.						
C40.	Uses an all day lotion.						
C41.	None known.						
C42.	To have her hiatus hernia repaired.						
C43.	Long history of heartburn especially after meals.						
C44.	None contributory. Husband alive & well. No						
	children.						
C45.	Eight days.						
C46.	Ectopic pregnancy 25 years ago. Heart attack						
	1-1/2 years ago.						
C47.	Please tell her what she is getting in hypodermic						
	injections. States that she gets nauseated when						
	doesn't know.						
C48.	Housewife.						
C49.	Has affected eating habits & has been unable to walk						
	as much as necessary due to heartburn & abdominal						
	discomfort.						
C50.	Expecting that surgery will relieve discomfort.						
C51.	None.						
C52.	Husband.						
C53.	Husband, two sisters and some friends.						
C54.	Belongs to United Church.						

ITEM	CUES						
C55.	Makes her feel alone and afraid.						
C56.	States she does not mind receiving help when she needs it.						
C57.	Smoking helps and she gets a lot of support from her husband.						
C58.	No, but she is concerned that the heart attack she had may cause problems during the operation.						
C59.	Speaks clearly. Seems well oriented to hospital procedure.						
C60.	English.						
C61.	Last August.						
C62.	No.						
C63.	Normal discharge.						
C64.	Does not do breast self-examination.						
C65.	One ectopic pregnancy.						
C66.	Jan. 23 - Routine preoperative instructions given. Smokes. Chest clear. No problems. Previous coronary.						
C67.	Yes.						
C68.	Chest clear. No pulmonary infiltration seen. Heart & mediastinal contours are centrally located and do not appear abnormal.						
D1.	Proceed to Section G. When you have finished reading the Kardex RETURN to Section D and make another selection.						
D2.	Proceed to Section C. When you have finished reading the Chart RETURN to Section D and make another selection.						

ITEM	CUES						
D3.	Proceed to Section E.						
D4.	The team leader is not available. Make another						
	selection in Section D.						
E1.	The patient thanks you for listening and says that						
	she feels better talking about it.						
E2.	The patient begins to cry.						
E3.	The patient states, "How do you know there is						
	nothing to worry about?"						
E4.	The patient states, "So I shouldn't be so worried						
	that it might mean my heart will fail during the						
	operation."						
E5.	The patient thanks you and states, "It makes me						
	feel better to know what will happen to me even						
	though I don't look forward to the tube in my nose."						
E6.	The patient states, "The physio lady explained it						
	all to me yesterday."						
E7.	Done well.						
E8.	The patient consents to do this.						
E9.	The patient asks if she could take a tub bath						
	instead.						
E10.	The patient states, "I have already done so but I						
	would like to rinse my mouth again, it is so dry."						
E11.	The patient thanks you and says she will.						
E12.	The patient states, "I do feel better but I would						
	like to see my doctor before the operation."						
F1.	Your patient is taking a bath. Make another						
	selection in Section F.						

ITEM	CUES						
F2.	Proceed to Section G. When you have finished read-						
	ing the Kardex RETURN to Section F and make another						
	selection.						
F3.	Proceed to Section C. When you have finished read-						
	ing the Chart RETURN to Section F and make another						
	selection.						
F4.	Your patient is taking a bath. Make another						
	selection in Section F.						
F5.	Your patient is taking a bath. Make another						
	selection in Section F.						
F6.	Proceed to Section J.						
G1.	Dulcolax suppository i evening preoperative.						
	Seconal 100 mg h.s.						
	Valium 10 mg & Atropine 0.4 mg p.o. 1 hr. pre-						
	operative.						
G2.	Abdominal shave prep. - done. Phisohex scrub in						
	a.m. following bath. N/G tube preoperative.						
G3.	None identified.						
G4.	Up.						
G5.	At h.s.						
G6.	Tub.						
G7.	NPO following clear fluid breakfast.						
G8.	Self.						
G9.	No.						
G10.	Alert.						
G11.	Self.						
G12.	T.P.R. q.d. @ 1600; B.P. on admission.						

ITEM	CUES						
G13.	Right handed.						
G14.	Reading glasses.						
G15.	Upper & lower dentures.						
G16.	Physio to teach deep breathing & coughing exercises.						
G17.	None.						
H1.	States she is feeling somewhat jumpy, with						
	butterflies in her stomach.						
H2.	States she was able to sleep.						
H3.	Yes, he explained that he would repair the hiatus						
	hernia. He also told her she would need a stomach						
	tube for a few days.						
H4.	No.						
H5.	States not really.						
H6.	No.						
H7.	States 25 years ago but really cannot remember much						
	about it.						
H8.	States sort of because she was with her sister						
	following a bowel operation.						
H9.	States she would like to have it taped.						
H10.	States yes. The nice physio lady explained every-						
	thing to her, and she practiced last evening.						
H11.	States her husband will visit in the evening.						
H12.	States no, but she does use an all day lotion on						
	her face.						
H13.	States the doctor took a tracing of my heart. Does						
	that mean he is concerned about it? "I am worried						
	that I may have a heart attack during the operation						
	and I just can't relax."						

ITEM	CUES						
H14.	Tub bath.						
I1.	Proceed to Section L.						
I2.	Proceed to Section G. When you have finished read-						
	ing the Kardex RETURN to Section I and make another						
	selection.						
I3.	Proceed to Section C. When you have finished read-						
	ing the Chart RETURN to Section I and make another						
	selection.						
I4.	Proceed to Section H.						
I5.	The patient appears worried. Make another selection						
	in Section I.						
I6.	The team leader is not available. Make another						
	selection in Section I.						
J1.	The team leader indicates that you are doing fine.						
	She states she can understand why the patient is						
	so anxious.						
J2.	The phoned results indicated normal sinus rhythm.						
	There is evidence of an old extensive myocardial						
	infarction.						
J3.	The team leader states that the doctor will be in to						
	visit the patient preoperatively. The team leader						
	will inform him of the patient's anxiety.						
J4.	Number 14.						
J5.	A hospital gown and leggings. The O.R. staff will						
	place a cap on the patient.						
J6.	All valuables go into a labelled envelope and are						
	locked in the cupboard. Money over $20 must go into						
	safe keeping.						

ITEM	CUES						
J7.	Yes.						
K1.	Proceed to Section I.						
K2.	Proceed to Section G. When you have finished read-						
	ing the Kardex RETURN to Section K and make another						
	selection.						
K3.	Proceed to Section I.						
K4.	Proceed to Section I.						
K5.	Proceed to Section I.						
L1.	R - 24; regular, moderately deep.						
L2.	Costal, clear, equal.						
L3.	Equal.						
L4.	Equal.						
L5.	None heard.						
L6.	36.2 degrees C.						
L7.	Hands cool to touch.						
L8.	Slightly flushed.						
L9.	Pink.						
L10.	Pale pink.						
L11.	Pale.						
L12.	Pale.						
L13.	P - 98; regular, strong.						
L14.	Moderately strong.						
L15.	Apex 84; irregular, strong.						
L16.	B.P. - 140/80.						
L17.	170 cm.						
L18.	65 kg.						
L19.	Large boned, slightly overweight.						

ITEM	CUES						
L20.	Pink and moist.						
L21.	Pink.						
L22.	Pink and firm.						
L23.	Upper & lower dentures.						
L24.	No halitosis.						
L25.	Pink and moist.						
L26.	Present.						
L27.	Pink.						
L28.	NPO.						
L29.	No I.V.						
L30.	No I.V.						
L31.	On NPO.						
L32.	Skin clear, dry and has been shaved.						
L33.	Indented.						
L34.	Protruding, symmetrical.						
L35.	Bowel sounds present.						
L36.	None.						
L37.	None.						
L38.	Voiding in bathroom q.s.						
L39.	Alert.						
L40.	Attentive.						
L41.	React normally.						
L42.	Strong and equal.						
L43.	Moves without difficulty.						
L44.	Normal.						
L45.	Standing erect.						
L46.	None.						

ITEM	CUES						
L46.	None.						
L47.	Sclera white, conjunctiva pink, symmetrical eye						
	movements, no discharge.						
L48.	No wax deposits, no drainage.						
L49.	Clear, no discharge.						
L50.	Resilient skin, smooth, moist, no lesions or						
	discharge.						
L51.	Hair soft and clean.						
L52.	Tense.						
L53.	Coherent, speech rapid & hesitant, voice quavering.						
L54.	Hyperactive.						
L55.	Tense.						
L56.	Wearing own nightgown and housecoat.						
L57.	Symmetrical, large, pendulous.						
L58.	Small, protruding, no discharge.						

Appendix E

Modal Answer Record

Adapted from Knor (1980). Used by permission.

MODAL ANSWER RECORD

SIMULATION # 1

NURSING DIAGNOSIS: Label: Actual Problem - A Potential Problem - B	A
GOAL: (State in behavioural terms)	Anxiety due to previous heart attack

ITEM	CUES						
	female, age 60	+					
	hiatus hernia repair 1330	+					
	blood work done	0					
	urinalysis done	0					
	dulcolax suppos. at h.s.	0					
	refused h.s. sedation	-					
	0615 breakfast, NPO	0					
	ECG to be done pre-op	+					
	N/G tube pre-op	0					
A3.	to Section C - Chart						
C1.	T 36.6-37.2; P 72-84; R 18-20; B.P. 140/80	0					
C2.	Seconal 100 mg q.h.s.	0					
C3.	Awake x 1	+					
C4.	tense; questioning whether heart attack of 1-1/2 yrs	+					
	ago will cause problems during surgery						
C7.	hiatus hernia repair	+					
C8.	dyspnea - none	0					
C9.	smokes 1 pkg daily	+					
C10.	no dizziness	0					
C11.	no coughing	0					

ITEM	CUES						
C13.	heartburn after meals worse for past 6 months	0					
C19.	Wt 65 kg; Ht 170 cm	0					
C22.	Infrafer 1 daily	0					
C28.	walks 5 blocks daily	0					
C29.	adequate energy	0					
C31.	sleeps 2315 - 0715	0					
C33.	no sleep aid requirements	0					
C34.	glasses for reading	0					
C35.	normal hearing	0					
C37.	tub q2d	0					
C38.	no assistance required	0					
C39.	upper and lower dentures	0					
C41.	no allergies	0					
C46.	ectopic pregnancy 25 years ago	0					
	heart attack 1-1/2 years ago	+					
C47.	tell her contents of hypo; not knowing makes her	+					
	nauseated						
C52.	husband sig. person	0					
C54.	U.C.	0					
C55.	alone and afraid	+					
C56.	doesn't mind help when needed	0					
C57.	smoking	0					
	husband helps with coping						
C58.	concerned about heart attack of 1-1/2 years ago	+					
C67.	consent signed	0					
C68.	chest clear and normal	0					
K1.	to Section I - for ECG						

ITEM	CUES						
I1.	to Section L - physical assessment						
L1.	R 24, mod. deep, reg.	0					
L2.	costal, clear, equal	0					
L6.	36.2	0					
L7.	hands cool to touch	+					
L8.	slightly flushed	+					
L11.	pale pink upper ext.	0					
L12.	pale lower ext.	0					
L13.	88, reg., strong	0					
L16.	B.P. 140/80	0					
L20.	lips pink, moist	0					
L21.	tongue pink	0					
L25.	M.M. pink, moist	0					
L52.	tense	+					
L53.	coherent, speech paid, voice quavering	+					
L54.	hyperactive	+					
B3.	to Section H - Interview						
H1.	jumpy, butterflies	+					
H2.	able to sleep	-					
H3.	Dr. explained hiatus hernia repair, needs N/G tube	0					
H5.	No SOB	0					
H8.	knows some routine	0					
H9.	wants wedding band taped	0					
H10.	physio taught DB & C	0					
H11.	husband coming in p.m.	0					
H12.	no special bath aids	0					
H13.	concerned about previous heart attack	+					

ITEM	CUES						
H14.	prefers tub bath	0					
D3.	to Section E - Care	GOAL:					
		identifies					
		concerns re					
		effect of					
		heart attack					
		on surgery;					
		is relaxed,					
		anxiety					
		decreased.					
E1.	thanks you for listening	allow pt. to					
		verbalize					
E4.	states "so I shouldn't be so worried"	reassure					
		that ECG					
		precaution-					
		ary					
E5.	thanks you and states she feels better	explain pre					
		& post-op					
		care					
E11.	thanks you	think of					
		more ques-					
		tions					
E12.	wants to see Dr. pre-op	ask re more					
		concerns					
E8.	consents	ask to take					
		a bath					

ITEM	CUES						
E10.	states she has already done so, but will do again	ask to do					
		m/c					
F6.	to Section J - T.L.						
J1.	doing fine. T.L. can understand pt's anxiety	inform T.L.					
		of progress					
J2.	ECG - normal; evidence of old extensive infarction	ask results					
		of ECG					
J3.	Dr. coming pre-op. T.L. will inform him of pt's	recommend					
	anxiety	Dr. visit					

Appendix F

Alternate Route

From Knor (1980). Used by permission.

ALTERNATE ROUTES

SIMULATION #1

Begin with Chart (C), then:

1. Interview (H)⟶Care (E)⟶Team Leader (J)*

*END OF EXERCISE

Appendix G

Modal Decision Matrix

MODAL DECISION MATRIX - SIMULATION #1

NURSING DIAGNOSIS Anxiety due to previous heart attack

GOAL OF CARE Patient identifies concerns re effect of heart attack on surgery and is relaxed, anxiety decreased

ALTERNATIVE ACTIONS	*	CONSEQUENCES	PROBABILITY	RISK
E1. Allow pt. to verbalize fears	*	1. Anxiety decreases	High	None
about surgery.	*	2. Patient relaxes.	High	None
		3. Anxiety not decreased.	Low	Low
E4. Reassure patient that ECG is	*	1. Understands and anxiety decreased.	High	None
done as a precaution.		2. Does not understand and anxiety not		
		decreased.	Low	Low
E3. Reassure that ECG is routine	*	1. Anxiety decreased.	Low	None
----		2. Anxiety increased.	Low	Low
		3. No effect on anxiety.	Questionable	Low
E5. Explain to patient re pre and	*	1. Understands and anxiety decreased.	High	None
post op care.		2. Does not understand, anxiety not		
		decreased.	Low	Low

Appendix H

Test Instruments A and B

Adapted from Knor (1980). Used by permission.

TEST ON DECISION MAKING IN NURSING

FORM A

TEST ON DECISION MAKING IN NURSING

INSTRUCTIONS TO STUDENTS

This test is composed of 40 patient care situations. Each situation contains cues for a nursing diagnosis. A cue is any sign, symptom, medical diagnosis, medical treatment regime, laboratory test result or socioeconomic information that the nurse uses when making decisions. A nursing diagnosis is an actual or potential patient problem that a nurse is qualified and licensed to treat. An example is: PAIN DUE TO ABDOMINAL DISTENTION.

Please work through each situation completely before proceeding to the next. Complete each page before going on to the next in each situation, and do not return to the first pages once completed.

1. Read the situation carefully.

EXAMPLE:
SITUATION:

> You are caring for Mr. Jones who has returned from the O.R. three hours ago. He had a subtotal gastrectomy. He complains of excrutiating abdominal pain. You observe a moderate amount of bright sanguinous drainage from the nasogastric tube. His T.P.R. is 37.8 C - 96 - 20 and his blood pressure is 90/70.

2. In Part A state what you think the nursing diagnosis is.

EXAMPLE:
PART A: Nursing Diagnosis:

---

3. In Part B, in the spaces on the left side of the page, list the cues you used to diagnose the patient's problem. Then, indicate how the cues relate to your diagnosis. Mark a cue "+" if it supports your diagnosis. Mark a cue "-" if it contradicts your diagnosis. A cue that has no relationship to your diagnosis is marked "0". Record your answers by circling "+", "-", or "0" to the right of the list of cues.

EXAMPLE:
PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

4. In Part C, alternative nursing actions are listed. Using the Key below, rank the actions.

1 Optimal action
2 Second most optimal action
3 Third most optimal action
4 Least optimal action

EXAMPLE:
PART C: Nursing Action

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check chart for analgesic order.

_____ 2. Check dressing for fresh bleeding.

_____ 3. Inform physician of patient status.

_____ 4. Measure and record amount of N.G. drainage.

5. Rate your self-confidence in identifying the cues, diagnosing the patient's problem and selecting the optimal nursing action. Circle your ratings.

1 About 95% uncertain
2 About 75% uncertain
3 About 50% uncertain
4 About 25% uncertain
5 About 5% uncertain

EXAMPLE:
PART D: Self-Confidence Rating

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

Following is a full example of an item as it would occur on the test:

SITUATION:

You are caring for Mr. Jones who has returned from the O.R. three hours ago. He had a subtotal gastrectomy. He complains of excrutiating abdominal pain. You observe a moderate amount of bright sanguinous drainage from the nasogastric tube. His T.P.R. is 37.8 C - 96 - 20 and his blood pressure is 90/70.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check chart for analgesic order.

_____ 2. Check dressing for fresh bleeding.

_____ 3. Inform physician of patient status.

_____ 4. Measure and record amount of N.G. drainage.

PART D: Self-Confidence Rating

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

1. SITUATION:

Mr. Brown, age 62, is being investigated for epigastric pain and indigestion. He is scheduled for a gastric analysis in the a.m. You notice that he has been pacing up and down the hall. When you greet him you find a tense facial expression, and upon touching his hand you note his hands are damp and cold. Your comment "You seem worried" brings this response, "It's this waiting. I just want it over so I know what's going on!"

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to express how he feels using open-ended questions.

_____ 2. Ask him what he understands about the procedure.

_____ 3. Explain what the procedure involves.

_____ 4. Sit down with him and let him talk.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

2. SITUATION:

It is Mrs. Bell's 6th post-operative day following a pyloroplasty. She developed pneumonitis. During a coughing spell she suddenly bends to splint her incision and you notice pink serous drainage coming through her dressing. Vital signs show her pulse is 96 and weak, her respirations are rapid and shallow. Examination of the incision shows gaping at the bottom third.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Advise the patient to remain quiet and not to cough.

_____ 2. Apply moist sterile dressing and abdominal binder.

_____ 3. Notify the physician immediately.

_____ 4. Remain with the patient.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

3. SITUATION:

Mrs. Nichol, a 43 year old diabetic, is in hospital following an attack of acute cholecystitis. You have just tested her 16:30 urine to find it 5% for sugar and moderate for acetone. She states that she feels a little tired and that her head aches.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess her for signs of dehydration, weakness and ketones on her breath.

_____ 2. Call lab. to take blood for blood glucose test.

_____ 3. Check chart for order for crystalline insulin according to S. & A. results.

_____ 4. Give 120 ml orange juice with sugar added.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

4. SITUATION:

Mrs. James, a 28 year old teacher, is in hospital with acute cholecystitis. She is receiving Ampicillin 500 mg q6h I.V. Shortly after you add 500 mg to her volutrol you notice that she develops a rash over her body. She complains of itching at I.V. site and of feeling warm all over.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Change I.V. fluid to D5W.

_____ 2. Notify physician of your observations.

_____ 3. Slow I.V. tkvo.

_____ 4. Withhold Ampicillin until further notice.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

5. SITUATION:

Mr. Condon is being treated for hepatitis which he acquired while working in Nicaraugua. He paces up and down the hall. when you question him he expresses concern about the prognosis of the disease. He states that he had a friend who developed cirrhosis following hepatitis infection and is worried that he, too, will develop cirrhosis.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Clarify what he wants to know about hepatitis and cirrhosis.

_____ 2. Make time to sit and talk with him.

_____ 3. Provide information about how cirrhosis occurs.

_____ 4. Reassure him that everything will be alright.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

6. SITUATION:

Mr. Johns, age 39, had a vagotomy and pyloroplasty this a.m. He is restless and is complaining of nausea and a sensation of fullness. It has been an hour since you gave him Demerol and Phenergan for pain. You notice that the fluid in his N.G. tube is not moving and the tubes are not kinked.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check chart for orders for analgesic and antiemetic.

_____ 2. Check chart for order to irrigate N.G. tube.

_____ 3. Notify physician of nonpatency of the tube.

_____ 4. Reposition patient for comfort.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

7. SITUATION:

Mr. Sloan, age 62, had an inguinal hernia repaired yesterday. This a.m. you notice a moderate amount of bright red oozing through his dressing. His blood pressure is 128/90, pulse is 120 and thready, and respirations are 22 and shallow. He is restless and alert.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Administer O_2 at 6 l/min per mask.

_____ 2. Check for decreased urinary output, skin changes and changes in vital signs.

_____ 3. Notify the physician of changes.

_____ 4. Place in shock position, head slightly elevated and legs elevated at 45 degrees.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

8. SITUATION:

Mrs. Gin, age 82, was admitted last evening with gastroenteritis. She has an I.V. of Ringer's solution infusing at 50 ml/h. Her urinary output has been 625 ml since admission; her oral intake has been 400 ml. You notice that she has a dry mouth. Her pulse is 92.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess for other signs of dehydration.

_____ 2. Check chart for order for antidiarrheals.

_____ 3. Monitor I.V. at 50 ml/h.

_____ 4. Offer 100 - 200 ml oral fluids while awake.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

9. SITUATION:

Ms. Klein, age 40, is being treated for a bleeding duodenal ulcer. She is now receiving a unit of blood. You answer her call bell and find that she has vomited some bright red blood. She is flushed and complains of chills and headache.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Establish Normal Saline solution I.V. by a secondary line.

_____ 2. Halt transfusion.

_____ 3. Monitor pulse, respiration and blood pressure q10-15min.

_____ 4. Notify physician of patient status.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

10. SITUATION:

This is Mr. Arnold's seventh day following a gastrectomy for cancer. He complains of dysuria and you notice that he is using the urinal frequently. His T.P.R. is 37.8 C - 88 - 24. He says that his urine is dark and a bit cloudy. He also says he hasn't been drinking very much fluid.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check chart for order for analgesic (Demerol).

_____ 2. Encourage fluid intake of 100 ml/h while awake.

_____ 3. Send urine specimen to lab for Culture and Sensitivity.

_____ 4. Suggest to physician that he be given a urinary antiseptic (Bactrim).

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

11. SITUATION:

Mrs. Kell, age 76, underwent surgery yesterday for release of small bowel adhesions. She has an I.V. of Ringer's Lactate infusing at 150 ml/h. You notice that her hands and feet are puffy and that she has shortness of breath. On auscultation of her lungs you hear moist breaths. Her skin is cool to touch.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Monitor pulse, respirations and blood pressure q10-15min.

_____ 2. Notify physician of patient status.

_____ 3. Position in high fowler's position.

_____ 4. Slow infusion tkvo.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

12. SITUATION:

Mr. Engel, age 26, was diagnosed a week and a half ago as having diabetes mellitus. He has stated that he knows what diabetes is. This morning, upon greeting him, you find Mr. Engel looking sullen. He disregards your greeting and asks, abruptly, "Haven't you brought my insulin? Don't you know I must take it at 07:30?"

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to express his feelings, using reflection.

_____ 2. Ask him what he knows about the management of diabetes, using open-ended questions.

_____ 3. Give him some responsibility in planning for his care.

_____ 4. Plan to spend some time with him.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

13. SITUATION:

Mr. Crane, age 52, has just returned from the P.A.R.R. following a hernia repair. He is drowsy but restless. He is reluctant to move, have his position changed, or to deep breathe and cough. To your question, "Are you sore?", he croaks, "Yes", and points to his incision.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check for full bladder, tight dressing.

_____ 2. Check for time and dose of last analgesic.

_____ 3. Explain why pain is occurring.

_____ 4. Move him to another position.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

14. SITUATION:

Mrs. Green, age 57, is in for investigation of an abdominal mass. She sleeps poorly, and picks at her food stating that it makes her feel nauseous. She appears to treat her condition lightly, stating, "I'm not worried; I'm in good hands."

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Arrange to spend some unhurried time with her.

_____ 2. Ask her what she expects to happen during the investigation.

_____ 3. Have her be responsible for some of the preparation.

_____ 4. Use reflection to encourage her to express her concerns.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

15. SITUATION:

Mrs. Summer, age 78, is in hospital with gastroenteritis. She has been on bedrest for four days. Her colour is pale. Her respirations are 24 and shallow and her breathing appears laboured. Her chest expands poorly and auscultation shows diminished breath sounds. She has been reluctant to move and to turn.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assist and encourage to deep breathe and cough qlh.

_____ 2. Assist her to dangle and up into the chair t.i.d.

_____ 3. Have her use the incentive spirometer.

_____ 4. Reposition q2h and provide passive range of motion exercises.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

16. SITUATION:

Mrs. Donald, age 31, is in for control of diabetes following severe gastritis. In the late afternoon you find she has become confused. She is weak and trembling. Her skin is flushed and moist, her respirations are shallow, her pulse is rapid.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Give a snack of peanut butter with crackers.

_____ 2. Give orange juice 120 ml with sugar added.

_____ 3. Have the lab. take blood specimen for blood glucose stat.

_____ 4. Prepare 50% glucose I.V. for administration.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

17. SITUATION:

Mr. Breuhier, age 60, developed an infection in his incision following a hiatus hernia repair. His temperature is 38.2 C. He has been perspiring profusely and you have just changed his sheets for the second time in three hours. His 24 hour intake has been 450 ml and his output has been 450 ml of dark amber urine.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assist with personal care and hygiene.

_____ 2. Check chart for I.V. fluid replacement order.

_____ 3. Encourage fluid intake of 200 ml/h during waking hours.

_____ 4. Monitor intake and output, patient weight.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

18. SITUATION:

Mrs. Powell returned from the O.R. an hour ago following a thyroidectomy. As you near her bedside you hear crowing respirations. She is very drowsy and her colour is cyanosed.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check for hoarseness of voice; ask patient to speak.

_____ 2. Check under her neck and shoulders for fresh bleeding.

_____ 3. Loosen the neck dressing.

_____ 4. Notify physician of possible obstruction.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

19. SITUATION:

Mr. Martin, age 57, had a thyroidectomy three days ago for adenocarcinoma. He complains of pain in his Lt. calf and is reluctant to move the affected extremity. You note that the affected area feels warmer than his other extremity. The team leader confirms your observations.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Apply warm moist heat to area.

_____ 2. Elevate affected leg slightly while in bed.

_____ 3. Have him remain on bedrest until seen by physician.

_____ 4. Notify physician of the observations.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

20. SITUATION:

Mrs. Knight, age 72, is in hospital for investigation of abdominal pain. She has vomited x 3 in the last 6 hours for a total of 130 ml. Her intake during this time has been 150 ml. Her urine output has been 250 ml. She complains of thirst. Her skin is dry and lacking turgor.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check chart for antiemetic order.

_____ 2. Check chart for I.V. fluid replacement order.

_____ 3. Encourage fluid intake of 150 ml/h. while awake.

_____ 4. Monitor intake and output.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

21. SITUATION:

Bill Mohr, age 17, has just arrived on the ward from Emergency following a closed reduction of a high fracture of his right upper arm. His right arm is in skeletal side-arm traction. He has no movement or sensation of the thumb and first two fingers of his right hand. He complains of pain in his right arm.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Ask him to move his right hand toward the ulnar side.

_____ 2. Compare the sensation in his left hand with the sensation in his right hand.

_____ 3. Have him extend the fingers of his right hand qlh.

_____ 4. Notify the physician of any decrease in movement or sensation.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

22. SITUATION:

Mrs. Banco, age 52, is in hospital following a stripping and ligation of varicose veins. She complains of severe pain in the left hand where she has an I.V. running. She grimaces as you check the infusion site. The area is swollen and reddened. The I.V. flowrate is sluggish with no blood backflow.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Apply warm compresses to the needle insertion site.

_____ 2. Check the chart for an order for analgesic.

_____ 3. Discontinue the infusion and remove the needle from the site.

_____ 4. Notify the physician of your observations.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

23. SITUATION:

Mr. Jones, age 45, has been diagnosed as having a gastric ulcer. The doctor has explained the condition and the medical regimens to him. Afterwards, Mr. Jones asks you if he will have to give up his bedtime hot rum toddy. He clears his throat frequently and blinks as he talks.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to express his concerns, using open-ended questions.

_____ 2. Arrange to spend some undisturbed time with him.

_____ 3. Ask him if he has any questions about what the doctor has told him.

_____ 4. Observe him for other physical and behavioural signs of anxiety.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

24. SITUATION:

Mr. Manson had a hiatus hernia repair three days ago. He complains of stabbing pain in the incisional region. The incision appears reddened for 2.5 cm around the bottom half and is puffy. His T.P.R. is 38 C - 86 - 20.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Apply warm sterile compresses to the incision.

_____ 2. Check the chart for an order for Tylenol.

_____ 3. Notify the physician of your observations.

_____ 4. Take swab from incision for C & S.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

25. SITUATION:

Mrs. Larsen, age 25, was admitted two days ago with chest pain and was diagnosed as probable myocardial infarction. She has no previous history of heart disease. Her father has had angina for two years. She says that the pain was crushing like a vice. "It took my breath away." She expresses many concerns about the attack. "Am I going to die? Will I have another heart attack?"

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess her knowledge of heart disease and what contributes to it.

_____ 2. Help her to examine factors in her own life that contributed to her MI, using open-ended questions.

_____ 3. Provide information and clarification about heart disease.

_____ 4. Use open-ended questions to help her problem-solve ways to reduce the risk factors in her life.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

26. SITUATION:

Mr. Fredrickson, age 45, has been admitted with a probable myocardial infarction. His father and his uncle have heart disease. He has smoked 2 packages of cigarettes a day before coming into hospital. He is a practising criminal lawyer working 50-60 hours a week. He is to be on bedrest, to reduce or gradually stop smoking. He demands access to a phone, saying, "I have to make a few calls that won't wait. I'm not that sick".

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess his understanding of MI, using reflection and open-ended questions.

_____ 2. Clarify the prognosis and information given by the doctor.

_____ 3. Discuss with him how he sees himself as a "sick person".

_____ 4. Strengthen his own problem-solving skills in coping with feelings of low esteem.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

27. SITUATION:

Mr. Jackson, age 25, is being treated for ulcerative colitis. He is found walking the halls at 24:00, stating that he can't sleep. He lights up a cigarette and requests to see his doctor.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to express his concerns, using open-ended questions.

_____ 2. Arrange time to sit down and talk to him.

_____ 3. Have him describe what he understands about his condition.

_____ 4. Notify his doctor of the request and inform him that you have done so.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

28. SITUATION:

Mrs. Lincoln, age 45, had a vagotomy and pyloroplasty yesterday. Her dressing was changed a half hour ago for four 4 x 4 gauze and one-half the ABD pad saturated with bright red drainage. Now you notice a 4 cm. spot of bright red drainage on the surface of the ABD pad. Mrs. Lincoln's T.P.R. is 37 C - 96 - 24. Her B.P. is 90/68. Her pulse is weak and her respirations are shallow.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Monitor pulse, respirations, B.P., skin colour and temperature q10-15min.

_____ 2. Notify the physician of your observations.

_____ 3. Outline the spot with pen, and monitor for changes in size q10-15min.

_____ 4. Reinforce dressing with abdominal pads.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

29. SITUATION:

Mrs. Klein, age 43, is being treated for a bleeding ulcer. She received one unit of blood this morning. After supper you note that she has not voided since breakfast. She states that she has a backache and slight chills.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check for distention of her bladder.

_____ 2. Monitor her vital signs q10-15min.

_____ 3. Notify the physician of her observations.

_____ 4. Send the blood unit and a sample of her blood to the lab.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

30. SITUATION:

Mark Brooks, age 50, has been diagnosed as having a right lower lobe viral pneumonia. His T.P.R. is 39.6 C - 98 - 24. His respirations are shallow and he finds that it is an effort to breathe. He is unable to cough though rales are noticed at the right lung base on auscultation.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Encourage him to DB & C q2h.

_____ 2. Position in high fowler's position.

_____ 3. Perform all personal care and hygiene for him.

_____ 4. Provide O_2 per mask @ 6 l/min.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

31. SITUATION:

Mark Anson, age 10, is brought to emergency after being stung on his left forearm by an insect. His left forearm is red and swollen. He is pale, weak and diaphoretic. His pulse is 140 and weak.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check pulse, respirations and B.P. q15min.

_____ 2. Ensure that his airway is adequate.

_____ 3. Establish O_2 at 6 l/min per mask.

_____ 4. Remain with him to provide reassurance.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

32. SITUATION:

Mrs. Grant, age 69, is a patient in ECU. She suffered a stroke four years ago and has marked right sided weakness. She also has motor aphasia and often can't communicate her needs. She is frequently incontinent of urine. Her perineum is excoriated and she winces as perineal care is given.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Note the pattern of bladder emptying, then establish a toileting schedule.

_____ 2. Place pads around her to absorb the urine.

_____ 3. Toilet her q2h and before meals.

_____ 4. Wash and dry her perineum frequently, and apply protective ointment.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

33. SITUATION:

Mr. Bell, age 75, has been in the coronary care unit for five days following a myocardial infarction. He has some impairment of hearing in his left ear and has a cataract showing in his right eye. He had a cataract removed from his left eye six months ago. On entering his unit, you discover him out of bed, looking through his bedside stand. He states that he is tired of all "those wires" keeping him in bed and that he has provided enough help in "checking out" the equipment.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to verbalize his thoughts and feelings.

_____ 2. Clarify what the "wires" are used for.

_____ 3. Provide him with his glasses and hearing aid.

_____ 4. Remain with him in his unit to reassure him.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

34. SITUATION:

Miss Anderson, a 42 year old librarian, had a breast biopsy done two days ago which was positive for cancer, showed no lymph node involvement and was confined to the tumor in the breast. A lumpectomy was then done to remove the tumor on the following day. You find her crying in her room in the afternoon. She tells you about her friend who died of cancer, saying "I'm afraid they didn't get it all."

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess what she understands about her diagnosis and her prognosis.

_____ 2. Clarify the information given to her by her doctor and surgeon.

_____ 3. Correct any misinformation or lack of information that she has.

_____ 4. Use open-ended questions to give an opportunity to express fear.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

35. SITUATION:

Bobby Dean, age 19, has a fracture of his cervical spine at the fifth vertebra following a skiing accident. He is paralyzed from the neck down with no voluntary movement of his trunk, arms or legs. He also has no sensation below the neck. He is on a Stryker turning frame with Crutchfield head tongs in place providing cervical skeletal traction. When you enter his room, you see him watching a ski programme on TV. He tells you that he'll be back on the slopes for the championships next year.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to set the pace to discuss the situation.

_____ 2. Be sensitive to what he may be feeling about the situation.

_____ 3. Provide a calm, accepting environment.

_____ 4. Recognize that he is grieving and allow him to do so.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

36. SITUATION:

Mrs. Crowhurst, age 67, has been in hospital for three days following onset of a cold. This has exacerbated her chronic bronchitis. When you bring in her lunch, she is wheezing on inspiration and on expiration. She is slightly blue around her mouth. She coughs frequently but expectorates no mucous though the cough is rattly in sound. Her respirations are 24 and shallow. On auscultation, rales are heard midchest over the bronchi.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assist with postural drainage.

_____ 2. Encourage and assist with DB & C q2h while awake.

_____ 3. Encourage her to drink 100 ml/h while awake.

_____ 4. Place cool air humidifier beside her bed.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

37. SITUATION:

Jenny Miller, age 26, is paralyzed following a fracture of the fifth cervical vertebra. She has no movement in any of her limbs or her trunk, with no sensation below the crests of her shoulders. She is being cared for on a Foster turning bed and has skull skeletal traction in place with 4.5 Kg weight.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Apply splints and supports to hands and feet.

_____ 2. Check the chart for an order for passive ROM exercises to all extremities q.i.d.

_____ 3. Maintain all limbs in good alignment.

_____ 4. Turn and reposition her q2h.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

38. SITUATION:

Mrs. York, age 72, has been in hospital for the last six days with a fractured right hip. She has now developed pneumonia. She has a cough productive of greenish sputum. Her T.P.R. is 39.4 C - 96 - 24. Her respirations are shallow and "grunting" in nature. Each breath requires effort. She has cyanosis of her lips and nailbeds. Auscultation reveals rales at the base of both lungs.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Administer O_2 per mask @ 6 l/min.

_____ 2. Assist with DB & C q2h.

_____ 3. Encourage fluid intake of 200 ml/h while awake.

_____ 4. Plan her care so that periods of rest are available between activities.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

39. SITUATION:

Mrs. Griffin, age 45, married and mother of three boys, ages 13, 15 & 16, is a new diabetic admitted for regulation of her diabetes. She expresses great concern over the 1800 Cal. diabetic diet that she has been prescribed, saying, "I can't make my family suffer just because I'm on diabetic diet. What about going out? My husband and I curl, and we always go to the club after for a bite to eat and a few drinks. That's part of the fun. If I can't do that, I don't know if I can take this diet."

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess her readiness to learn.

_____ 2. Assess her understanding of diabetes, and build on that knowledge.

_____ 3. Discuss diabetes; how it occurs, the treatment and prognosis.

_____ 4. Explain how diet and activity interrelate and how they relate to hyperglycemia.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

40. SITUATION:

Mr. Benjamin, age 79, and a retired chartered accountant, entered the nursing home two and a half months ago. He is untidy, with remnants of food noticable in two days growth of beard. His clothes are rumpled and stained. When asked about his family, he says that they are too busy to come and see him. "I'm no good anymore. What use am I to anyone - I can't do a thing."

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assist him with his grooming.

_____ 2. Encourage him to talk about himself, especially about his present feelings.

_____ 3. Maximize the number of choices that he can make about his care and activities.

_____ 4. Praise him when you see that he is successful at some activity or when he is neatly groomed.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

TEST ON DECISION MAKING IN NURSING

FORM B

TEST ON DECISION MAKING IN NURSING

INSTRUCTIONS TO STUDENTS

This test is composed of 40 patient care situations. Each situation contains cues for a nursing diagnosis. A cue is any sign, symptom, medical diagnosis, medical treatment regime, laboratory test result or socioeconomic information that the nurse uses when making decisions. A nursing diagnosis is an actual or potential patient problem that a nurse is qualified and licensed to treat. An example is: PAIN DUE TO ABDOMINAL DISTENTION.

Please work through each situation completely before proceeding to the next. Complete each page before going on to the next in each situation, and do not return to the first pages once completed.

1. Read the situation carefully.

EXAMPLE:
SITUATION:

You are caring for Mr. Jones who has returned from the O.R. three hours ago. He had a subtotal gastrectomy. He complains of excrutiating abdominal pain. You observe a moderate amount of bright sanguinous drainage from the nasogastric tube. His T.P.R. is 37.8 C - 96 - 20 and his blood pressure is 90/70.

2. In Part A state what you think the nursing diagnosis is.

EXAMPLE:
PART A: Nursing Diagnosis:

---

3. In Part B, in the spaces on the left side of the page, list the cues you used to diagnose the patient's problem. Then, indicate how the cues relate to your diagnosis. Mark a cue "+" if it supports your diagnosis. Mark a cue "-" if it contradicts your diagnosis. A cue that has no relationship to your diagnosis is marked "0". Record your answers by circling "+", "-", or "0" to the right of the list of cues.

EXAMPLE:
PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

4. In Part C, alternative nursing actions are listed. Using the Key below, rank the actions.

1 Optimal action
2 Second most optimal action
3 Third most optimal action
4 Least optimal action

EXAMPLE:
PART C: Nursing Action

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check chart for analgesic order.

_____ 2. Check dressing for fresh bleeding.

_____ 3. Inform physician of patient status.

_____ 4. Measure and record amount of N.G. drainage.

5. Rate your self-confidence in identifying the cues, diagnosing the patient's problem and selecting the optimal nursing action. Circle your ratings.

1	About 95% uncertain
2	About 75% uncertain
3	About 50% uncertain
4	About 25% uncertain
5	About 5% uncertain

EXAMPLE:
PART D: Self-Confidence Rating

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

Following is a full example of an item as it would occur on the test:

SITUATION:

You are caring for Mr. Jones who has returned from the O.R. three hours ago. He had a subtotal gastrectomy. He complains of excrutiating abdominal pain. You observe a moderate amount of bright sanguinous drainage from the nasogastric tube. His R.P.R. is 37.8 C - 96 - 20 and his blood pressure is 90/70.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Administer ordered analgesic.

_____ 2. Inform physician of patient status.

_____ 3. Check dressing for fresh bleeding.

_____ 4. Measure and record amount of N/G drainage.

PART D: Self-Confidence Rating

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

1. SITUATION:

Mr. Day, age 49, is in hospital for repair of a hiatus hernia tomorrow. An hour ago you completed his shave prep. and explained the preoperative procedures. You return to find him sitting rigidly with clenched hands. He states that he has a headache. His voice quavers as he speaks. He states that he is afraid because he doesn't know what will happen to him.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to express his concerns, using open-ended questions.

_____ 2. Ask him to explain what he understands about the surgery.

_____ 3. Explain what the surgery involves.

_____ 4. Sit down with him and let him talk.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

2. SITUATION:

Mr. Cooper is 5 days post-operative following a repair of a hiatus hernia. He has developed a productive cough. During a coughing spell, he suddenly wraps his arms around his upper abdomen. When you check you notice pink serous drainage seeping through the dressing. His pulse is 96 and weak, his respirations are rapid and shallow. The middle of the incision gapes open approximately 3 cm.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Advise him to remain quiet and not to cough.

_____ 2. Apply a moist sterile dressing and abdominal binder.

_____ 3. Notify the physician immediately.

_____ 4. Remain with him.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

3. SITUATION:

Jim Sail, age 15, was admitted two weeks ago with Juvenile Diabetes. You have just tested an 1130 urine and find it 3% sugar and negative for acetone.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess him for signs of dehydration, weakness and ketones on his breath.

_____ 2. Call lab. to take blood for blood glucose test.

_____ 3. Check chart for order for insulin according to S. & A. results.

_____ 4. Give 120 ccs. orange juice with sugar added stat.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

4. SITUATION:

Mr. George, age 70, is on Staphcillin 1 Gm. q6h I.V. for a staphylococcal infection in his incision. Shortly after you instill 1 Gm. Staphcillin in his I.V. you notice that he becomes flushed and his eyes become puffy. He tells you he has a "funny" feeling at the I.V. site.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Change solution to 5% Dextrose in Water tkvo.

_____ 2. Notify the physician.

_____ 3. Slow I.V. tkvo.

_____ 4. Withhold Staphcillin until further notice.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

5. SITUATION:

Mrs. Carls is being treated for hepatitis which she acquired on a recent holiday in Mexico. She looks worried. Upon questioning you find that she is concerned about her prognosis. She had a friend who developed cirrhosis following hepatitis and is worried that the same will happen to her.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Clarify what she wants to know about hepatitis and cirrhosis.

_____ 2. Make time to sit and talk with her.

_____ 3. Provide information about how cirrhosis occurs.

_____ 4. Reassure her that everything is alright.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

6. SITUATION:

Mr. Bills, age 31, returned from the O.R. four hours ago following a subtotal gastrectomy. He has a Salem sump tube in place. He is restless and complains of increasing abdominal pain and nausea. He received an analgesic 45 minutes ago for incisional pain. You notice that the fluid in his Salem sump is not moving, though the Gomco suction is working.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check the chart for orders for analgesic and antiemetic.

_____ 2. Check the chart for an order to irrigate the Salem sump tube.

_____ 3. Notify physician of nonpatency of the tube.

_____ 4. Reposition him for comfort.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

7. SITUATION:

This is Mrs. Williams' first post-operative day following a small bowel resection. You gave her Demerol 100 mg. for pain a half hour ago. She now complains of thirst. Her pulse is 96 and full, her respirations are 24. Her B.P. is 86/60. She is restless and looks anxious. You consult with the team leader for action.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Administer O_2 at 6 l/min per mask.

_____ 2. Check for decreased urinary output, skin changes and changes in vital signs.

_____ 3. Notify physician of observations.

_____ 4. Place in shock position, head slightly elevated and legs elevated 45 degrees.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

8. SITUATION:

Ms. Neil, age 76, was admitted last evening with gastroenteritis. She has an I.V. of 2/3-1/3 solution infusing at 50 ml/hr. Her urine output has been 450 ml. in 8 hours, and her intake 100 ml. You notice that she has a dry mouth and coated tongue.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess for other signs of dehydration.

_____ 2. Check chart for order for antidiarrheal agents.

_____ 3. Monitor I.V. at 50 ml/h.

_____ 4. Offer 100 - 200 ml. oral fluids while awake.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

9. SITUATION:

Mr. Hill, age 70, hemorrhaged following a hernia repair. He is receiving the first of 2 units of blood ordered for replacement. Suddenly he vomits a small amount of dark blood. He is flushed, and complains of a headache and slight dyspnea.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Establish Normal Saline solution I.V. by a secondary line.

_____ 2. Halt the transfusion.

_____ 3. Monitor pulse, respiration and blood pressure q10-15min.

_____ 4. Notify physician of patient status.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

10. SITUATION:

Seven days after a Lower Left lobectomy for cancer, 76 year old Mr. Moore complains of dysuria. You notice that he is using the urinal frequently. His urine is strong smelling and cloudy. His temperature is 38 C. When questioned, he admits that he has only had 2 cups of coffee in the past six hours.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check chart for order for analgesic (Demerol).

_____ 2. Encourage fluid intake of 100 cc. per hour while awake.

_____ 3. Send urine specimen to lab for Culture and Sensitivity.

_____ 4. Suggest to physician that he be given a urinary antiseptic (Bactrim).

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

11. SITUATION:

Mr. Jarvis, age 72, hemorrhaged following a liver biopsy. He is receiving blood at the rate of 100 gtt./min. (20 gtt./ml. drop factor). You enter his room to find him dyspneic and coughing up frothy pink-tinged sputum. His pulse is 86 and irregular and his lips and nailbeds are bluish tinged.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Monitor pulse, respirations and blood pressure q15min.

_____ 2. Notify physician of your observations.

_____ 3. Position in high Fowler's position.

_____ 4. Slow infusion tkvo.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

12. SITUATION:

Ms. Anson, age 20, was diagnosed two weeks ago as having ulcerative colitis. She appears to understand and accept her condition well. This morning, upon greeting her, you find Ms. Anson tense. She turns away from you and demands abruptly, "Can't you get me a room to myself? I need to have my own bathroom. I can't wait for everyone else to finish in this one!"

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow her to express her feelings, using reflection.

_____ 2. Ask her what she knows about the management of Ulcerative Colitis, using open-ended questions.

_____ 3. Give her some responsibility in planning for her care.

_____ 4. Plan to spend some time with her.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

13. SITUATION:

Ms. Morris, has just returned from the P.A.R.R. following a cholecystectomy. She responds to commands, but is reluctant to turn, deep breathe or cough. She moans when disturbed to have vital signs checked. To your question, "Where do you hurt?" she motions toward the incision on her right side.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check for a full bladder, or a tight dressing.

_____ 2. Check for the time and dose of the last analgesic.

_____ 3. Explain why the pain is occurring.

_____ 4. Move her to another position.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

14. SITUATION:

Mrs. Anderson, age 51, is in for investigation of long-standing vague LLQ pain. She sleeps poorly and jumps when you enter her room. She appears to treat her condition lightly, stating, "Oh, it's nothing, I'm just getting old."

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Arrange to spend some unhurried time with her.

_____ 2. Ask her what she expects to happen during the investigation.

_____ 3. Have her take responsibility for some of the preparation for the investigation.

_____ 4. Use reflection to encourage her to express her concerns.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

15. SITUATION:

Mrs. Gale, age 57, had a hiatus hernia repair two days ago. She has been reluctant to move, deep breathe and cough. Today, she complains of dyspnea and effort to breathe when washing. She appears pale. Her chest expansion is decreased. Her T.P.R. is 37.4 - 84 - 22.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assist and encourage her to D.B. & C. qlh.

_____ 2. Assist her to dangle and to get up into the chair t.i.d.

_____ 3. Have her use the incentive spirometer.

_____ 4. Reposition her q2h and provide passive range of motion exercises.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

16. SITUATION:

Ms. Stone, age 28, is a newly diagnosed diabetic. At 1145 you answer her call bell and find her looking apprehensive. Her skin is flushed and moist. You notice a fine tremor of the hands. She states that she feels weak and hungry. Her respirations are rapid and shallow.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Give a snack of crackers and peanut butter.

_____ 2. Give 120 ccs. orange juice with sugar added.

_____ 3. Have the lab. take blood for a blood glucose test.

_____ 4. Prepare 50% glucose I.V. for administration.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

17. SITUATION:

Mr. Meyer, age 40, developed an infection in his incision following a hiatus hernia repair. His T.P.R. is 37.2 - 88 - 18. He has been perspiring excessively and his urine is dark amber. The chart shows oral intake has been 500 cc. and his urine output has been 450 cc. His bed was changed three times during the night.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assist with personal care and hygiene.

_____ 2. Check chart for I.V. fluid replacement order.

_____ 3. Encourage fluid intake of 200 cc./h during waking hours.

_____ 4. Monitor intake and output, patient weight.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

18. SITUATION:

Mr. Powell returned to the ward an hour ago following a thyroidectomy. As you approach his bed, you note that he has retraction of his neck muscles and he makes a crowing noise on inspiration. He remains somewhat drowsy.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check for hoarseness of voice, asking him to speak.

_____ 2. Check under his neck and shoulders for fresh blood.

_____ 3. Loosen the neck dressing.

_____ 4. Notify the physician of possible obstruction.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

19. SITUATION:

Mrs. Andrews, age 48, had a vaginal hysterectomy four days ago. Today she complains of discomfort in her right calf. The area is warmer than the corresponding area on the left calf. She is reluctant to move her leg.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Apply moist heat to the area.

_____ 2. Elevate the affected leg slightly when in bed.

_____ 3. Have her remain on bedrest until seen by the physician.

_____ 4. Notify the physician of your observations.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

20. SITUATION:

Mrs. Drummond, age 79, is in hospital with an undiagnosed gastric problem. Today, she vomited 80 cc. of partially digested food. She has had a fluid intake of 300 cc. in the last 8 hours. Her mouth is dry and her skin is loose and flabby. She has voided 325 cc. dark urine in the last 8 hours.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check chart for order for antiemetic agent.

_____ 2. Check chart for replacement I.V. fluids.

_____ 3. Monitor intake and output.

_____ 4. Offer oral fluids 120 cc./hr while awake.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

21. SITUATION:

Jack Thompson, age 14, was admitted from Emergency and the O.R. last night following a closed reduction of a fractured left femur. His left leg is in skeletal traction with a Pearson attachment and a Thomas splint. He has a Steinmann pin through the left tibia. He complains of pain in his left leg and his left big toe and of numbness and tingling in his left foot.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Ask him to dorsiflex his left foot.

_____ 2. Compare the sensation in his left foot with that in his right foot.

_____ 3. Have him move his toes qlh.

_____ 4. Notify the physician of any decrease in movement or sensation in his left leg.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

22. SITUATION:

Mrs. Flower, age 30, is in hospital with pancreatitis. She has an I.V. of D5W running in her right forearm. You find her restless and complaining of severe pain in her Rt. arm. There is an area of redness along the vein above the I.V. insertion site, and it feels warm to touch. The I.V. is not dripping.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Apply warm compresses to needle insertion site.

_____ 2. Check the chart for an order for analgesic.

_____ 3. Discontinue the infusion and remove the needle from the site.

_____ 4. Notify the physician.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

23. SITUATION:

Mr. Smith, age 54, has been diagnosed as having cirrhosis of the liver. The doctor explained the condition and the medical regimen to Mr. Smith. Following, he asks you if this means that he will not be able to have his usual nightcap of whiskey in hot milk in the future. He paces up and down in front of you, rubbing his neck.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to express his concerns, using open-ended questions.

_____ 2. Arrange to spend some undisturbed time with him.

_____ 3. Ask him if he has any questions about what he was told by the doctor.

_____ 4. Observe him for other physical and behavioural signs of anxiety.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

24. SITUATION:

Mrs. Anton had a cholecystectomy three days ago. She complains of a stabbing pain around her incision. She appears flushed and her skin feels warm to touch. The incision is puffy and reddened for 2 cm. around the incision. Her T.P.R. is 37.6 - 88 - 18.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Apply warm sterile compresses to incision.

_____ 2. Check chart for order for Tylenol.

_____ 3. Notify the physician of your observations.

_____ 4. Take a swab from the incision for C & S.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

25. SITUATION:

Mr. Daniels, age 34, was admitted to the Coronary Care Unit four days ago with chest pain now confirmed as a Myocardial Infarction. He has no previous history of heart disease though his grandfather had occasional angina. Mr. Daniels describes the chest pain as being severe, taking his breath away. "I felt like something was lying on my chest, then I could feel the pain moving down my left arm to my fingertips. I thought I was a goner." He then asks, "Will I have other attacks like this?"

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess his knowledge of heart disease and what contributes to it.

_____ 2. Help him to examine factors in his life that contributed to his M.I., using open-ended questions.

_____ 3. Provide information and clarification about heart disease.

_____ 4. Use open-ended questions to help him problem-solve ways to reduce the risk factors in his life.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

26. SITUATION:

Mr. Meier, age 52, was admitted three days ago with a probable myocardial infarction. There is a family history of heart disease - his father and uncle had M.I.'s in the past. He smokes 1-1/2 packs of cigarettes a day. He asks you to contact his partner. As you advise that he is to remain on bedrest and that he should reduce and eventually stop smoking, he bursts out, "I can't live like an invalid. That's no life. I've got too much to do."

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess his level of understanding of Myocardial Infarction, using open-ended questions and reflection.

_____ 2. Clarify the information and prognosis given by the doctor.

_____ 3. Discuss with him how he sees himself as a "sick" person.

_____ 4. Strengthen his own problem-solving skills in coping with feelings of low esteem.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

27. SITUATION:

Mr. Jones, age 43, is being treated for a duodenal ulcer. He is pacing up and down the hall, stating that he cannot rest. He is smoking excessively and requesting to see the doctor.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to express his concerns, using open-ended questions.

_____ 2. Arrange to sit down and talk with him.

_____ 3. Have him describe what he understands about his condition.

_____ 4. Notify his doctor of the request and inform him that you did so.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

28. SITUATION:

Ms. Lane, age 39, had a subtotal gastrectomy yesterday. A half hour ago you changed her dressing for three 4 x 4's and one 6 x 8 abdominal pad saturated with bright red drainage. Now you notice a 4 cm. spot of bright sanguinous drainage on the external surface of the dressing. Her T.P.R. is 36.7 - 102 - 24. Her B.P. is 82/64. Her pulse is weak and her respirations are shallow.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Monitor pulse, respirations, B.P., skin colour and temperature q10-15min.

_____ 2. Notify the physician of your observations.

_____ 3. Outline the spot with a pen, and monitor for changes in size q10-15min.

_____ 4. Reinforce dressing with abdominal pads.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

29. SITUATION:

Mr. Hill, age 70, has hemorrhaged following a hernia repair and has received two units of whole blood this a.m. You are on evening shift. You notice that he has not voided since before the transfusion. He complains of a headache and a backache.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check for distention of his bladder.

_____ 2. Monitor vital signs q10-15min.

_____ 3. Notify the physician of the observations.

_____ 4. Send blood unit and a blood sample to lab.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

30. SITUATION:

Bob Naylor, age 42, has been diagnosed as having a lower left lobe bacterial pneumonia. He has been coughing up copious amounts of rusty sputum. His T.P.R. is 40 - 102 - 26. His respirations are grunting and shallow. As you assist with his morning care, he gasps for breath and asks to rest for a moment. His lips and nailbeds are bluish tinged.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Encourage him to DB & C q2h.

_____ 2. Position in high Fowler's position.

_____ 3. Perform all personal care and hygiene for him.

_____ 4. Provide O_2 per mask @ 6 l/min.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

31. SITUATION:

Mrs. Manson, age 75, arrives in Emergency after being stung by a wasp in her garden. Her right hand is reddened and swollen. She states that the sting site itches. She is slightly dyspneic with a slight wheeze. Her pulse is 108 and weak.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Check pulse, respirations and B.P. ql5min.

_____ 2. Ensure that her airway is adequate.

_____ 3. Establish O_2 at 6 l/min per mask.

_____ 4. Remain with her to provide reassurance.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

32. SITUATION:

Mrs. Anderson, age 75, is being cared for in ECU. She had a CVA two years ago and remains paralyzed on her right side. Presently, she is unaware of her surroundings. She is incontinent of foul-smelling urine 4-6 x/day. Her perineum is reddened and blistered.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Note pattern of bladder emptying, then establish toileting schedule.

_____ 2. Place pads around her to absorb urine.

_____ 3. Toilet her q2h and before meals.

_____ 4. Wash and dry her perineum frequently, and apply protective ointment.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

33. SITUATION:

Mr. Johannsen, age 69, has been in the Coronary Care Unit following a Myocardial Infarction three days ago. He has severe bilateral myopia and uses a hearing aid in his right ear. His glasses and hearing aid are kept on the top of his bedside locker. On entering his unit, you discover him out of bed, looking through his bedside table. He states that he is tired of all those "wires" keeping him in bed and that he has helped the doctor long enough in "checking out" the equipment.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to verbalize his thoughts and feelings.

_____ 2. Clarify what the "wires" are used for.

_____ 3. Provide him with his glasses and hearing aid.

_____ 4. Remain with him in his unit to reassure him.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

34. SITUATION:

Mrs. Jensen, age 39, married with one daughter age 16, had a breast biopsy done two days ago which was positive for cancer, no lymph node involvement and confined to the tumor in the breast. She then had a lumpectomy done to remove the tumor the following day. You find her crying in her room in the afternoon. She then talks about her friend who died of cancer, and says, "I'm afraid they didn't get it all."

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess what she understands about her diagnosis and her prognosis.

_____ 2. Clarify the information given to her by her doctor and surgeon.

_____ 3. Correct any misinformation or lack of information that she has.

_____ 4. Use open-ended questions to give an opportunity to express fear.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

35. SITUATION:

Danny White, age 25, has a fracture of his cervical spine at C5 following a skiing accident. He is paralyzed from the neck down with no voluntary movement of the extremities and trunk and with no sensation below the neck. He is on a Foster turning bed with Crutchfield head tongs in place attached to 4.5 Kg. weight. When you enter the room, you see him staring at the ceiling and he doesn't react or respond to your greeting.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Allow him to set the pace to discuss the situation.

_____ 2. Be sensitive to what he may be feeling about the situation.

_____ 3. Provide a calm and accepting environment.

_____ 4. Recognize that he is grieving and allow him to do so.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

36. SITUATION:

Betty White, age 35, was admitted two days ago with acute bilateral bronchopheumonia. Her chest expansion is decreased. On auscultation, she has rales over both lung bases. She has a moist and harsh cough though it is unproductive. Her pulse is 92, thready and her respirations are 22 and shallow. Her temperature is 39.6 C.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assist with postural drainage q4h.

_____ 2. Encourage and assist with DB & C q2h while awake.

_____ 3. Encourage increased fluid intake of 100 ml/hr while awake.

_____ 4. Place a cool air humidifier by her bedside.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

37. SITUATION:

Barry Thomas, age 21, paralyzed following a skiing accident, has a fracture of the fifth cervical vertebra. He has no movement in any of his limbs, and no sensation below his neck. He can only shrug his shoulders. He is being cared for on a Stryker turning frame and has Crutchfield head tongs in place with 5.5 Kg. of weight.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Apply splints and supports to hands and feet.

_____ 2. Check chart for order for passive ROM exercises to all extremities q.i.d.

_____ 3. Maintain all limbs in good alignment.

_____ 4. Turn and reposition him q2h.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

38. SITUATION:

Mr. Glenn, age 67, was admitted eight days ago, comatose, following a cerebrovascular accident. He is 185 cm. tall and weighs 100 Kg., and is difficult to turn. He doesn't deep breathe and cough independently. His respirations are 18, shallow and rattly. No sputum is coughed up. His pulse is 86 and slight cyanosis is noticeable in the nailbeds.

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Administer O_2 per mask @ 6 l/min.

_____ 2. Assist with DB & C q2h.

_____ 3. Encourage fluid intake of 200 cc./hr. while awake.

_____ 4. Plan his care so that periods of rest are available between activities.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

39. SITUATION:

Maggie White, age 39, is a newly diagnosed diabetic admitted for regulation of her diabetes. She is married and a mother of two girls, ages 13 and 14. She says to you, "You know, lately I've been so cranky. I argue with the girls over nothing. I don't understand it. I'm almost never sick and now I have to take medicine daily, to be on a special diet - well that's not me!"

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assess her readiness to learn.

_____ 2. Assess her understanding of diabetes, and build on that knowledge.

_____ 3. Discuss diabetes; how it occurs, the treatment and prognosis.

_____ 4. Explain how diet and activity interrelate and how each interrelates with hyperglycemia/ hypoglycemia.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

40. SITUATION:

Mrs. Wall, a 74 year old retired high school teacher, was admitted to a nursing home two months ago. She is untidy, her hair is uncombed, she has some stains on her dress and her stockings are wrinkled. She has said of her children that they are too busy and don't have time for her. She says to you, "I'm no good anymore; what use am I to anyone - I can't do a thing."

PART A: Nursing Diagnosis:

_____

PART B: Cue Selection:

_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1
_____	-1	0	+1

DO NOT TURN BACK

PART C: Nursing Action:

1 = optimal
2 = second most optimal
3 = third most optimal
4 = least optimal

_____ 1. Assist her with grooming as needed.

_____ 2. Encourage her to talk about herself, especially about her present feelings.

_____ 3. Maximize the number of choices that she can make about her care and activities.

_____ 4. Praise her when you see that she is successful at some activity or when she is neatly groomed.

PART D: Self-Confidence Rating:

	95%	75%	50%	25%	5%
Nursing Diagnosis	1	2	3	4	5
Cue Selection	1	2	3	4	5
Choice of Action	1	2	3	4	5

Appendix I

Scoring Keys for Test Instruments A and B

SCORING KEY FOR NURSING DIAGNOSIS

TEST INSTRUMENTS A AND B

1. Anxiety due to perceived threat to biologic integrity
2. Decreased cardiac output due to hypovolemic shock and dehiscence
3. Potential alteration in acid-base balance due to ketoacidosis
4. Actual impairment of skin integrity due to adverse drug reaction
5. Anxiety due to perceived threat to biologic integrity
6. Pain due to retention of gastric contents and pressure on incision
7. Actual fluid volume deficit due to hemorrhage
8. Actual fluid volume deficit due to dehydration
9. Potential for injury related to hemolytic reaction
10. Pain due to irritation of urinary infection
11. Fluid volume excess due to excess fluid intake of blood
12. Powerlessness due to diagnosis of chronic illness
13. Pain related to surgical incision
14. Anxiety due to perceived threat to biologic integrity and physical safety
15. Ineffective breathing pattern due to pain, decreased energy and fatigue (decreased movement)
16. Inadequate nutrition for body requirements due to imbalance between insulin supply, food intake and exercise

17. Fluid volume deficit due to profuse diaphoresis and decreased fluid intake
18. Ineffective airway clearance due to obstruction of the airway
19. Pain due to thrombophlebitis
20. Actual fluid volume deficit due to vomiting
21. Pain related to fracture of left leg, traction, surgery and possible complications
22. Pain due to interstitial intravenous and phlebitis of vein
23. Anxiety due to perceived change in function and threat to meet physical needs
24. Pain due to wound infection
25. Anxiety related to terminal illness or potential death
26. Disturbance in body image related to inability to learn new role functioning behaviour in response to health changes (M.I.)
27. Anxiety due to perceived threat to biologic integrity and threat to meet physiological needs
28. Actual fluid volume deficit due to hemorrhage
29. Potential for injury due to hemolytic reaction
30. Ineffective airway clearance due to pneumonic process (secretion, obstruction and infection)
31. Ineffective breathing pattern due to allergy from insect sting
32. Actual impairment of skin integrity due to incontinence and irritation

33. Visual and auditory sensory-perceptual alteration due to altered environment and diminished senses
34. Anxiety and fear related to terminal illness or potential death
35. Dysfunctional grieving related to actual loss of body function
36. Ineffective airway clearance due to secretion, obstruction, and ineffective cough
37. Impaired physical mobility due to C5 fracture, traction and turning frame
38. Ineffective airway clearance due to immobility and perceptual/cognitive impairment
39. Knowledge deficit related to diabetes
40. Disturbance in self-esteem related to cognitive perceptual difficulties

SCORING KEY
FORM A

CUES

NOTE: Cues with a "D" designation are defining cues, that is, the nursing diagnosis must have one or more of these characteristics evident to be considered as the nursing diagnosis

1.	states wants to get waiting over (D)	+
	pacing hall (D)	+
	tense facial expression (D)	+
	hands damp and cold (D)	+
	gastric analysis in am	+
	investigation for epigastric pain and indigestion	+
2.	Pulse - 96, weak (D)	+
	Respirations - rapid, shallow (D)	+
	gaping incision - bottom third (D)	+
	six days post op pyloroplasty	+
	pneumonitis developed	0
	coughing spell, protects incision	+
	pink serous drainage	+
3.	urine for sugar = 5% @ 1630h (D)	+
	urine for acetone = mod @ 1630h (D)	+
	diabetes	+
4.	rash over body (D)	+
	complains of feeling warm all over (D)	+
	c/o itching at intravenous site (D)	+
	Ampicillin 500 mg I.V.	+
	symptoms begin after medication is added to I.V.	+
5.	pacing hall (D)	+
	states worried will develop cirrhosis (D)	+
	concerned about progress (D)	+
	Diagnosis - hepatitis	+
	friend developed cirrhosis	+
6.	restlessness (D)	+
	c/o abdominal fullness (D)	+
	c/o nausea (D)	+
	fluid in nasogastric tube not moving	+
	tubes not kinked	-
	analgesia for operative pain 1 hr ago	-
	vagotomy and pyloroplasty in am	+
7.	alert (D)	+
	Pulse - 120, thready (D)	+
	Blood pressure - 128/90	-
	restless (D)	+
	Respirations - 22, shallow	0
	1 day post op hernia repair	0
	moderate amount bright oozing through dressing (D)	+

8.	output - 625 ml since admission (D)	+
	oral intake - 400 ml (D)	+
	dry mouth (D)	+
	Pulse - 92 (D)	+
	gastoenteritis	+
	intravenous running at 50 ml./h	0
	age 82	0
9.	flushed (D)	+
	c/o headache (D)	+
	c/o chills (D)	+
	receiving 1 unit of blood	+
	vomitted some bright red blood	0
10.	c/o dysuria (D)	+
	frequency	+
	urine concentrated	+
	slightly cloudy urine	+
	T - 37.8 C	+
	low fluid intake	+
	7 days post op gastrectomy	0
11.	intravenous infusing at 125 ml/hr (D)	+
	shortness of breath (D)	+
	moist respirations (D)	+
	puffiness of hands, feet and eyelids (D)	+
	pale	0
	skin cool to touch	0
	NPO	0
12.	newly diagnosed diabetic	+
	states he knows what diabetes is (neg. D)	-
	sullen (D)	+
	ignores greeting (D)	+
	abrupt demand for insulin (D)	+
	age 26 +	
13.	immed. post op, returned from PARR	+
	drowsy	0
	reluctant to move and DB & C (D)	+
	restless (D)	+
	agrees is sore, pointing at incision (D)	+
14.	investigation of abdominal mass	+
	sleeps poorly (D)	+
	picks at food "makes me nauseated" (D)	+
	"I'm not worried (neg. D)	-
	"I'm in good hands (D)	-

15.	bedrest x four days with gastroenteritis	+
	reluctant to move or turn	+
	Respiration - 24, shallow (D)	+
	pale	0
	laboured breathing (D)	+
	diminished breath sounds (D)	+
	decreased chest expansion (D)	+
16.	diabetic for control following gastritis	+
	confused (D)	+
	skin flushed (neg. D)	-
	trembling (D)	+
	skin moist (D)	+
	Pulse - rapid (D)	+
	respirations shallow (neg. D)	-
	weal	+
17.	incisional infection following hiatus hernia repair	0
	24 hr. intake - 600 ml (D)	+
	urine concentrated	+
	output - 450 ml urine	+
	profuse perspiration, sheet changed x 2 in 1/2 hr (D)	+
	temperature - 38.2 C.	+
18.	post op thyroidectomy - 1 hr	+
	cyanosis (D)	+
	crowing respirations (D)	+
	very drowsy	0
19.	post op thyroidectomy 3 days	+
	complains on pain in Lt. calf (D)	+
	Lt. calf warmer than Rt.	+
	reluctant to move Lt. leg (D)	+
20.	age 72	+
	vomited x 3 in 6 hours - 130 ml.	+
	intake - 150 ml (D)	+
	thirst (D)	+
	skin dry, lacks turgor (D)	+
	output - 250 ml (D)	+
	undiagnosed gastric problem	0
21.	closed reduction, fracture Rt. arm	+
	skeletal traction on Rt. arm	+
	no movement digits Rt. hand (D)	+
	no sensation digits Rt. hand (D)	+
	complains of pain Rt. arm (D)	+
22.	Pain Lt. hand (D)	+
	flow rate sluggish	+
	I.V. Lt. hand	+
	I.V. site reddened	+
	I.V. site swollen	+
	no blood back flow	+
	stripping and ligation	0

23.	Diagnosis - gastric ulcer	+
	condition and medical treatment explained (neg. D)	-
	asks if must give up nightcap (D)	+
	clears throat frequently (D)	+
	blinks as he talks (D)	+
24.	stabbing pain in incisional area (D)	+
	temperature - 38 C.	0
	incision reddened 2.5 cm around bottom half	+
	3 days post hernia repair	0
25.	chest pain 2 days ago	+
	Diagnosis - probable M.I.	+
	no previous history of heart disease	+
	father has history of angina	+
	"pain was crushing like a vice - it took my breath away"	+
	"Am I going to die?" (D)	+
	"Will I have another heart attack?" (D)	+
	age 25	0
26.	Diagnosis - probable M.I.	+
	family history of heart disease	+
	criminal lawyer, works 50 - 60 hr/wk	+
	smokes 2 packs of cigarettes per day (D)	+
	demands telephone (D)	+
	Doctor's orders - bedrest, reduce smoking (D)	+
	"I'm not that sick" (D)	+
27.	walking halls at midnight (D)	+
	states cannot sleep (D)	+
	lighting cigarettes (D)	+
	requests to see Doctor (D)	+
	Treatment for ulcerative colitis	+
28.	1 day post op vapotomy and pyloroplasty	+
	dressing changed 30 min ago for 4 - 4x4's and 1/2 ABD saturated with bright red drainage	+
	dressing now has 4 cm spot bright red drainage on ABD	+
	Pulse - 96, weak (D)	+
	Respirations - 24, shallow	+
	Blood pressure - 90/68 (D)	+
29.	1 unit of blood in a.m.	+
	pc supper - has not voided since breakfast (D)	+
	slight chills (D)	+
	complains of backache (D)	+
	Treatment for bleeding ulcer	0

30. Diagnosis - RLL viral pneumonia	+
unable to cough (D)	+
Temperature - 39.6 C.	0
Pulse - 98	+
Respirations - 24, shallow (D)	+
effort to breathe (D)	+
rales heard R lung base (D)	+
31. stung by insect Lt. forearm	+
Lt. forearm red (D)	+
Lt. forearm swollen (D)	+
perspiring	+
pale (D)	+
weak	+
Pulse - 140, weak	+
32. age 69	+
stroke 4 years ago	+
marked Rt. sided weakness	+
motor aphasia, cannot communicate needs	+
frequent urinary incontinence	+
excoriated perineum (D)	+
winces as pericare given (D)	+
33. age 75	+
CCU 5 days post M.I.	+
cataract Rt. eye (D)	+
impaired hearing Lt. ear (D)	+
cataract removed Lt. eye six months ago (D)	+
out of bed going through bedside locker (D)	+
"tired of all the wires keeping him in bed" (D)	+
"has given enough help checking out equipment" (D)	+
34. age 42	0
breast biopsy and lumpectomy for Ca of breast	+
no lymph node involvement	-
crying 1 day post op (D)	+
talks about friend died of Ca (D)	+
"I'm afraid they didn't get it all"	+
35. age 19	+
fracture of cervical spine C5	+
paralyzed from neck down	+
no sensation below neck	+
on Stryker bed with crutchfield tongs	+
watching skiing on T.V. (D)	+
tells nurse he will be on the slopes in a year (D)	+
36. Cold for 3 days, previous chronic bronchitis	+
wheeze on inspiration and expiration (D)	+
slight circumoral cyanosis (D)	+
frequent rattly unproductive cough (D)	+
Respirations - 24, shallow (D)	+
rales heart mid chest (D)	+

37.	age 26	0
	Fracture of fifth cervical vertebra	+
	no movement of limbs and trunk (D)	+
	no sensation below shoulders (D)	+
	skull skeletal traction - 4.5 kg. (D)	+
38.	Fracture Rt. hip - 6 days ago	+
	Diagnosis - pneumonia	+
	cough productive of greenish sputum (D)	+
	Respirations - 24, grunting and shallow (D)	+
	rales at lung base (D)	+
	Pulse - 96	0
	cyanosis in lips and nailbeds (D)	+
39.	newly diagnosed diabetic in for control	+
	married, mother of three teen boys	0
	expresses concern about diet (D)	+
	"I can't make my family suffer" (D)	+
	"What about going out? I'm active, curling, I go out with husband, like to have a few drinks" (D)	+
40.	age 79	0
	retired CPA	+
	clothes rumpled and stained (D)	+
	food in beard (D)	+
	2 days beard growth (D)	+
	in nursing home 2-1/2 months	0
	states family is too busy to visit (D)	+
	"I'm no good, what use am I to anyone? I can't do a thing!" (D)	+

SCORING KEY

FORM B

CUES

NOTE: Cues with a "D" designation are defining cues, that is, the nursing diagnosis must have one or more of these characteristics evident to be considered as the nursing diagnosis.

1.	states has headache (D)	+
	voice quavers (D)	+
	states is afraid of the future (D)	+
	hands clenched (D)	+
	sits rigidly	+
	for hiatus repair	+
2.	Pulse - 96, weak (D)	+
	Respirations, rapid, shallow (D)	+
	gaping incision (D)	+
	five days post op. hernia	+
	productive cough	0
	coughing spell, protects incision	+
	pink serous drainage on dressing	+
3.	urine for sugar = 3% @ 1130h (D)	+
	urine for acetone = neg @ 1130h (D)	+
	juvenile diabetic	+
4.	flushed skin (D)	+
	puffy eyes (D)	+
	c/o funny feeling at intravenous site (D)	+
	Staphcillin 1 Gm. I.V.	+
	reaction after medication given	+
5.	looks worried (D)	+
	states worried will develop cirrhosis (D)	+
	concerned about progress (D)	+
	has hepatitis	+
	friend developed cirrhosis	+
6.	restlessness (D)	+
	c/o increasing abdominal pain (D)	+
	c/o increasing nausea (D)	+
	fluid in salem sump tube not moving	+
	suction working	-
	analgesia 45 min. ago	-
	subtotal gastrectomy 4 hours ago	+

7.	thirst (D)	+
	Pulse - 96 (D)	+
	Blood pressure - 86/20 (D)	+
	restless and anxious (D)	+
	analgesia 1 hour ago	0
	1 day post op bowel resection	0
	pulse - full (negative defining)	-
8.	output - 450 ml. in 8 hours (D)	+
	oral intake - 100 ml. (D)	+
	dry mouth (D)	+
	coated tongue (D)	+
	gastroenteritis	+
	intravenous of 2/3 and 1/3 running at 50 ml./h	0
	age 76	0
9.	flushed (D)	+
	c/o headache (D)	+
	c/o slight dyspnea	+
	received 1 unit of blood	+
	vomits small amount of dark blood	0
10.	c/o painful urination (D)	+
	frequency	+
	strong smelling urine	+
	cloudy urine	+
	T - 38 C.	+
	fluid intake - 240 ml. in 6 hours	+
	7 days post op. LL Lobectomy	0
11.	blood infusing 100 gtt/min (D)	+
	dyspnea (D)	+
	coughs up frothy pinkish sputum (D)	+
	Pulse - 86, irregular	0
	lips & nailbeds bluish tinged (D)	+
	age 72	0
	hemorrhaged post biopsy	0
12.	Diagnosis ulcerative colitis	+
	states she knows what to expect (neg. D)	-
	tense (D)	+
	turns away (D)	+
	demands own bathroom (D)	+
	age 20	+
13.	immed. post op, returned from PARR	+
	responds to commands	0
	moves and DB & C only on persuasion (D)	+
	moans when disturbed for vital signs (D)	+
	indicates site of incision for pain (D)	+

14.	investigation of vague LLQ pain	+
	sleeps poorly (D)	+
	jumpy (D)	+
	"Oh, it's nothing" (neg. D)	-
	"I'm just growing old." (D)	-
15.	2 days post op hiatus hernia repair	+
	requires much prodding to move, DB & C	+
	complains of dyspnea (D)	+
	pale	0
	shortness of breath (D)	+
	decreased chest expansion (D)	+
	Respirations - 22 (D)	+
16.	newly diagnosed diabetic	+
	appears apprehensive (D)	+
	skin flushed (neg. D)	-
	fine tremor of hands (D)	+
	states feels hungry, weak (D)	+
	respirations rapid (D)	+
	respirations shallow (D)	-
	skin moist (D)	+
17.	incisional infection following surgery) of hiatus hernia repair)	0
	decreased fluid intake - 500 ml (D)	+
	bed changed x 3 because of perspiration	+
	urine dark amber	+
	urine output - 450 ml (D)	+
	temperature - 38 C.	+
18.	post op thyroidectomy - 1 hr.	+
	neck muscle retractions (D)	+
	inspiratory crowing (D)	+
	somewhat drowsy	0
19.	post op hysterectomy 4 days	+
	complains of discomfort in Rt. calf (D)	+
	Rt. calf warmer than Lt.	+
	reluctant to move leg (D)	+
20.	age 79	+
	vomited 80 ml.	+
	intake - 300 ml in 8 hr (D)	+
	dry mouth (D)	+
	tissues loose and flabby (D)	+
	output - 325 ml dark urine in 8 hr (D)	+
	undiagnosed gastric problem	0
21.	closed reduction, fracture Lt. femur	+
	skeletal traction, Steinman pin Lt. tibia (D)	+
	complains of pain Lt. leg (D)	+
	complains of pain Lt. big toe (D)	+
	complains of numbness, tingling Lt. foot (D)	+

22.	pain Rt. forearm (D)	+
	I.V. not dripping	+
	Rt. arm warm (D)	+
	Rt. arm reddened	+
	I.V. Rt. forearm	+
	pancreatitis	0
	restless (D)	+
23.	Diagnosis - cirrhosis	+
	informed about condition and medical treatment (neg.D)	-
	asks questions re giving up whiskey nightcap (D)	+
	pacing up and down (D)	+
	rubs neck (D)	+
24.	stabbing pain around incision (D)	+
	temperature - 37.6 C.	0
	puffiness and redness around incision	+
	3 days post op cholecystectomy	0
25.	chest pain 4 days ago	+
	Diagnosis - M.I. confirmed	+
	no previous history of heart disease	+
	grandfather occasional angina	+
	"I felt like something was lying on my chest, then I could feel the pain moving down my arm to my fingertips."	+
	"I thought I was a goner." (D)	+
	"Will I have other attacks like this?" (D)	+
	age 34	0
26.	probable M.I. 3 days	+
	family history of heart disease	+
	businessman	+
	smokes 1-1/2 packs of cigarettes per day (D)	+
	request to see partner (D)	+
	advised to remain on bedrest, stop smoking (D)	+
	"I can't live like an invalid! That's no life." (D)	+
27.	pacing hall (D)	+
	states cannot rest (D)	+
	smokes excessively (D)	+
	requesting to see Dr. (D)	+
	Treatment for duodenal ulcer	+
28.	1 day post op subtotal gastrectomy	+
	dressing changed 30 min ago for 3 - 4 x 4's and 1 - 6 x 8 saturated with bright red drainage	+
	dressing now has 4 cm. spot bright red drainage	+
	Pulse - 102, weak (D)	+
	Respirations - 24, shallow	+
	Blood pressure - 82/64 (D)	+

29.	2 units of blood in a.m.	+
	evening - has not voided since transfusion (D)	+
	complains of headache (D)	+
	complains of backache (D)	+
	hemorrhaged following surgery	0
30.	Diagnosis LLL bacterial pneumonia	+
	cough - copious amount of rusty sputum (D)	+
	Temperature - 40 C.	0
	Pulse - 102	+
	Respirations - 26, grunting, shallow (D)	+
	Shortness of breath on exertion, requests to rest (D)	+
	lips and nailbeds bluish-tinged (D)	+
31.	stung by wasp Rt. hand	+
	Rt. hand reddened	+
	Rt. hand swollen	+
	sting site itches	+
	slight dyspnea (D)	+
	slight wheeze (D)	+
	Pulse - 108, weak	+
32.	age 75	+
	CVA 2 years ago	+
	paralysis Rt. side	+
	unaware of surroundings	+
	incontinent of urine 4-6 x per day	+
	urine foul smelling	+
	blistered perineum (D)	+
	reddened perineum (D)	+
33.	age 69	+
	In CCU - 3 days post M.I.	+
	severe bilateral myopia (D)	+
	hearing aid Rt. ear (D)	+
	glasses and hearing aid in locker (D)	+
	out of bed going through bedside locker (D)	+
	"tired of all the wires keeping him in bed" (D)	+
	"has helped Dr. enough checking out equipment" (D)	+
34.	age 39	0
	breast biopsy and lumpectomy for Ca Rt. breast	+
	no lymph node involvement	-
	crying (D)	+
	states friend died following breast Ca. (D)	+
	"I'm afraid they didn't get it all"	+
35.	age 25	+
	fracture of cervical spine C5	+
	no voluntary movement from neck down	+
	no sensation below neck	+
	on turning bed with crutchfield tongs	+
	staring at ceiling (D)	+
	no reaction or response to greeting (D)	+

36.	Diagnosis - acute bilateral pneumonia	+
	decreased chest expansion (D)	+
	Rales over both lungs (D)	+
	cough moist, harsh but unproductive (D)	+
	Respirations - 22, shallow (D)	+
	Temperature - 39.6 C. (D)	+
37.	age 21	0
	fracture of fifth cervical vertebra	+
	no movement of limbs and trunk except to shrug shoulders (D)	+
	no sensation below neck (D)	+
	on turning bed, crutchfield tongs (D)	+
38.	CVA 8 days ago, comatose	+
	tall and heavy, difficult to turn	+
	doesn't DB & C independently	+
	Respirations - 18, shallow, rattly (D)	+
	No sputum coughed up (D)	+
	Pulse - 86	0
	slight cyanosis in nailbeds (D)	+
	male	0
	age 67	0
39.	newly diagnosed diabetic in for regulation	+
	married, mother of two	0
	"I've been cranky lately" (D)	+
	"I can't understand it" (D)	+
	"I'm almost never sick, now I'm to be on medicine daily and to take a special diet. "That's not me!"	+
40.	age 74	0
	retired high school teacher	+
	stained dress (D)	+
	hair uncombed (D)	+
	wrinkled stockings (D)	+
	admitted to nursing home 2 months ago	0
	"children too busy and don't have time for me" (D)	+
	"I'm no good anymore, what use am I, I can't do a thing!" (D)	+

SCORING KEY

FORM A and B

NURSING ACTIONS

Optimal action

Note: The optimal action represents the best or first action taken to ensure safe and appropriate care for the patient.

3.	1	20.	2
4.	1	22.	3
6.	3	24.	2
8.	1	25.	1
9.	2	26.	1
12.	1	27.	2
13.	1	29.	1
14.	2	30.	4
16.	3	31.	2
17.	3	38.	1
19.	2	39.	1

Sets of actions

Note: The sets of actions represent two or more actions necessary for appropriate care of the patient. They are not carried out in any particular order and are not listed here in any particular order.

1.	1, 2, 4	23.	1, 2, 3
2.	1, 2, 3	28.	1, 2, 3
5.	1, 2, 3	32.	1, 3, 4
7.	2, 3, 4	33.	1, 2, 3
10.	2, 3, 4	34.	1, 2, 4
11.	2, 3, 4	35.	2, 3, 4
15.	1, 2, 3	36.	2, 3, 4
18.	1, 3, 4	37.	2, 3, 4
21.	1, 2, 4	40.	2, 3, 4