

Concept Maps in Clinical Settings: Improved Clinical Performance and Effective Patient Care

Part I

What is a Concept Map Care Plan?



Pamela Schuster

A concept map care plan is a creative teaching innovation that can enhance a student's critical thinking and communication skills in clinical settings (Schuster, 2002a). With a concept map care plan, faculty can "see" whether students understand the clinical patient assignments on the day of care. Concept map care plans are valid and reliable clinical tools that guide students in following the

American Nurses' Association (ANA) *Standards of Nursing Care* (1998). Students clearly and succinctly visualize priorities and identify relationships in clinical patient data. Students spend less time writing, and faculty members spend less time reading tedious column formatted care plans (Schuster, 2000b).

Faculty and students around the country have responded enthusiastically to this innovation in care planning. They have seen the effects of improved clinical performance and outstanding patient care provided by students as a result of using concept maps to guide and evaluate patient care. Students use concept map care plans to organize patient data, analyze relationships in the data, establish priorities, build on previous knowledge, identify what was not understood, and holistically view a patient's situation. Concept maps emphasize clinical reasoning, creativity, and individualized patient care (Schuster, 2002a).

Theoretical Basis: Teaching Students to Think Critically and Communicate Effectively

The theoretical basis of concept map care plans evolved from educational foundations and educational psychology (Ausubel, Novak, & Hanesian, 1984; Novak & Gowin, 1984). Concept maps are organized in a schematic graphical hierarchy, and they enable students to demonstrate their understanding of relationships among patient problems. In addition, concept maps facilitate students building new knowledge on pre-existing knowledge and assimilating new concepts by identifying relationships with those concepts already understood. Concept map care plans are a non-linear systematic way to contemplate, identify, and solve patient clinical problems.

Concept mapping promotes critical thinking. The National League for Nursing Accrediting Commission (NLNAC) has defined critical thinking as "the deliberative, *non-linear* process of collecting, interpreting, analyzing, drawing conclusions about, presenting, and evaluating information that is both factually and belief based" (National League for Nursing Accrediting Commission [NLNAC], 2000). Concept maps are non-linear, analytical tools used by students to formulate clinical judgments. Students develop concept maps based on assessment of actual clinical data. Students focus on actual problems they have identified after gathering patient data. They organize clinical judgments prior to beginning clinical care of patients and prepare an organized plan of nursing care. Concept map care plans help students to recognize relationships between medical and nursing diagnoses, assessment data, and treatments.

Student nurses must learn to use communication interventions to help patients and families overcome stress, adjust to the unalterable, and attain patient outcomes. In addition, they must learn to communicate within professional relationships (Schuster, 2000b). Students carry concept map care plans in their pockets, and they use them to communicate with patients, faculty, and staff. Nurse-patient communication interventions have been delineated for psychosocial nursing diagnoses (Schuster, 2002b). During clinical, both students and faculty make notations directly on the concept map care plans and update plans continuously throughout the clinical day. Prior to administering medications, students and faculty communicate by discussing and visualizing relationships between types of medications, symptoms, and laboratory data. In addition, concept map care plans facilitate accurate and complete documentation, which can be difficult for students to learn. The concept map care plan serves as a documentation guide, and everything on the map must be documented on flow charts or progress notes.

Relationships Between the ANA *Social Policy Statement*, Standards of Care, and Concept Map Care Plans

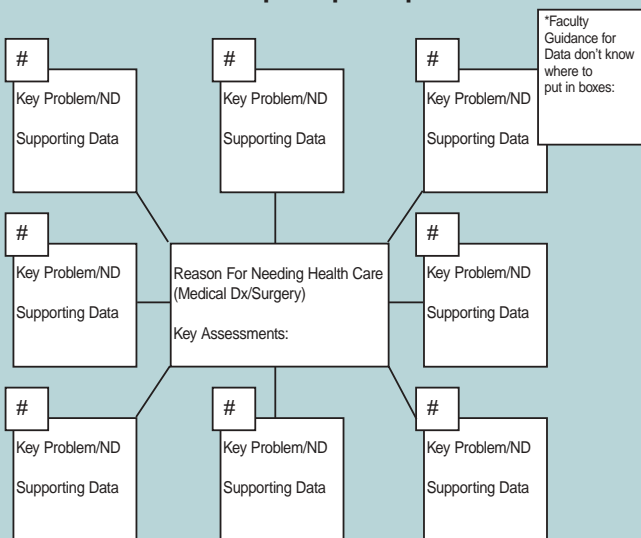
Concept map care plans enable students to focus on human responses to health states, reflecting the focus of nursing practice as specified by the ANA *Social Policy Statement* (1995). The reason the patient requires health care is centrally located on the map, and each nursing diagnosis and human response flows outward like spokes on a wheel.

Students demonstrate the ability to follow the ANA *Standards of Nursing Care* (1998) through developing and using concept map care plans. Improved clinical patient outcomes and improved student nursing care performance results when nursing students implement standards of nursing patient care.

Standard 1 – Collection of health data. Students must collect patient profile data pertinent to the clinical setting prior to developing the concept map care plan. In addition, types of patient data collected vary with the learning objectives for the clinical day, the level of student abilities, the amount of time the student spends with the patient, and the number of patients in the student assignment. Students can only be held responsible and accountable for what they have learned to assess. Students continuously update maps as new assessment data is obtained, analyzed, and integrated into the plan of care throughout the clinical day.

Standard 2 – Analysis of data to determine nursing diagnoses. Diagramming a concept map promotes critical analysis of patient data and deduction of nursing diagnoses. After analyzing patient data that have been collected, students make a list of key problems. Then, students begin by stating the reason the patient is seeking health care in the center of the page. Next, they list the major problems they have identified from the assessment data in the boxes around the central reason for health care. A template of a concept map is shown in Figure 1.

**Figure 1.
Concept Map Template**



Problems are supported with clinical patient data, including abnormal physical assessment findings, treatments, medications, intravenous solutions, abnormal diagnostic and laboratory tests, medical history, pain, and psychosocial and spiritual problems. Students must also identify key assessments that are related to the reason for health care and list them in the central box. If the student does not know where patient data should be placed on the map, they should put it off to the side of the map and ask faculty for guidance in data analysis (see Figure 1). Next, students draw lines between related diagnostic problems to show that they recognize meaningful associations between diagnoses. The map becomes covered with lines, and students soon come to realize that everything is related. In this way, they can develop an understanding of the concept of holistic patient care. Students also number nursing diagnoses in order of priority. To finish the diagram, students label each problem with a box available for the nursing diagnosis (see Figure 1).

Figure 2.

Template of Goals, Outcomes, Interventions, and Evaluation	
Problem # :	General Goal:
Behavioral Outcome Objective(s): The patient will.....(do what, say what, or have physical evidence).....on the day of care.	
Nursing Nutrition Interventions	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
Patient Evaluation of Responses	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
Summarize impressions of patient progress toward outcomes.	

Source: Schuster, P.M. (2002). *Instructor's guide to concept mapping: A critical thinking approach to care planning*. Philadelphia: FA Davis.

Standard 3 – Identification of expected patient outcomes. Students must identify goals and outcomes that are individualized to the patient. Students write general goal statements and specific measurable behavioral outcome objectives for the day of care for each nursing diagnosis (see Figure 2).

Standard 4 – Development of a plan of care with interventions to attain outcomes. Students will list goals, outcomes, and interventions in concept map care plans. For each nursing diagnosis, students first develop a goal and the patient's individualized outcomes. In addition, nursing-specific interventions to attain objectives are listed. Students include ongoing physical assessments, monitoring equipment, laboratory reports that will be monitored, treatments and medications to be administered, and communication interventions that are specific to the patient. The template shown in Figure 2 includes boxes for writing a goal, objectives, and interventions for a single nursing diagnosis. Prior to implementation of patient care, students should use as many templates as needed to list all goals, objectives, and interventions for each nursing diagnosis.

Standard 5 – Implementation of nursing interventions. The nurse implements interventions using the concept map plan of care. As each intervention is performed in the clinical setting, the intervention is checked off the list. Students can easily track what they've done and what needs to be done throughout the clinical day.

Standard 6 – Evaluation of patient progress toward attainment of outcomes. Evaluation of patient responses is also shown in Figure 2. Students record documentation of physical and emotional patient data as responses to nursing interventions. Last, they record documentation of impressions towards outcomes.

Part 2 of this article will appear in the January 2004 issue of *Dean's Notes*, and will focus on the reliability and validity of concept map care plans.

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