

# Critical Elements in the Process of Decision Making: A Nursing Perspective

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## Abstract

Decision making is a fundamental element of nursing work, one that is essential to understand as organizations explore cost effective ways to deliver quality health care. While the importance of decision making has been well articulated, previous descriptions of nursing work have had difficulty describing completely this cognitive component. This paper identifies critical elements within the process of nursing decision making that have not been addressed adequately within current decision making frameworks. In this exploratory research, nursing personnel described their work; qualitative content analysis was used to categorize components of nursing decision making within these descriptions. Revealed are complex nursing decisions that occur after the selection of nursing intervention, and prior to the implementation of that intervention. These decisions address the complex network of interactions involved with enactment of the nursing role, the repertoire of leadership skills such as collaboration, negotiation, and delegation required to elicit the involvement of other individuals; discretionary decisions made in the allocation of resources; priority setting; and strategizing. These findings have implications for nursing competency and quality of care, cost-effective delivery of health care, and nursing education.

## Introduction

The environment for providing health care has changed dramatically within the past decade in response to cutbacks in funding to health care organizations. Describing the roles of health care providers and examining the "correct" mix of different levels of providers have been strategies employed to provide cost effective ways of delivering health care. Much scrutiny has been focused on nursing personnel, who comprise the largest component of these health care providers (Stelling, 1994).

Describing nursing work has been approached by a variety of perspectives, including nursing workload measurement systems (Giovanetti, 1988; O'Brien-Pallas, Cockerill, & Leatt, 1991; O'Brien-Pallas, Giovanetti, Peereboom, & Martin, 1995), pay equity initiatives (Armstrong & Armstrong, 1990; Steinberg, 1990), and

descriptions typically focused on tasks that nurses perform and have not adequately depicted the cognitive activities that direct and support the performance of nursing work.

Decision making is a critical component of nurses' cognitive work, with this expertise one of the principal skills characterizing professional nursing (Hughes & Young, 1990). In nursing, the examination of decision making has been approached from a number of perspectives, including investigation of setting specific decision making, such as that occurring in public health, critical care, psycho-geriatrics, and acute medical care areas (Abraham & Buckwalter, 1994; Baumann & Deber, 1989; Bernick & Avery, 1994; dela Cruz, 1994; Hackbarth, Haas, Kavanagh, & Vlass, 1995; Lauri & Salantera, 1995), the influence of decision maker characteristics such as confidence, knowledge, expertise, and intuition (Bramadat, Chalmers, & Andrusyszyn, 1996; Hampton, 1994; Jasper, 1994; Lauri & Salantera 1995; Lutzen & Nordin 1995), and how people make decisions - the process they use.

Research on the process has addressed how people make decisions from prescriptive and descriptive perspectives. Prescriptive models describe how individuals should make decisions. They present the process of decision making as a highly rationale procedure in which individuals should use a logical approach in the selection of alternatives (Bell, Raiffa, & Tversky, 1988; Caine & Robson, 1993). Decision analysis and decision trees are examples of prescriptive models. In comparison, descriptive models present how individuals actually make decisions. These models describe decision making as consisting of a common process with multiple steps, including recognizing and sorting cues, developing hypotheses regarding the importance and meaning of cues, and taking action (Elstein, 1976; Larkin, McDermott, Simon, & Simon, 1980; Newell & Simon, 1972). The diagnostic reasoning and hypothetico-deductive models are two such models (Carneveli, Mitchell, Woods, & Tanner, 1985; Corcoran, 1986; Tanner, Padrick, Westfall, & Putzier, 1987; Thiele, Holloway, Murphy, Pendarvis, & Stucky, 1991).

It has been concluded that neither prescriptive nor descriptive models have completely captured the cognitive process used by nurses to arrive at a decision (Baumann & Deber, 1987; Benner & Tanner, 1987). For the purpose of understanding the process, there are a series of cognitive activities which have to take place, and which take place simultaneously. There is general agreement that problems are identified, decisions are made about interventions that are required, and evaluation may or may not take place.

This study reports an exciting new finding that adds to the body of literature about the decision making process. A critical component of the decision making process has been identified - one that occurs after the intervention has been decided upon, and prior to the implementation of that intervention. Whereas "planning" has been identified as a

stage occurring prior to implementation, the complexity of the decisions within this component of the decision making process have previously been unrecognized.

### **Purpose**

The purpose of this research was to explore the nature of nursing decision making. The intent was to obtain a clearer picture of the process nurses used to make decisions and the decisions that they made. Nursing decision making was explored within descriptions of nurses' work. A purposive sample of nursing personnel were asked to describe their work and their decision making. Ethnographic content analysis was used to categorize components of nursing decision making within these descriptions. Focus group interviews were conducted with nurses throughout the province of Ontario.

Fourteen interviews were conducted in nine organizations, for a total of 64 registered nurses. Demographic information was not collected from individual nurses. Settings were selected in order to obtain a wide representation of descriptions of nurses' work. These settings included hospitals, visiting nurse agencies, and public health agencies in northern, central, and southern areas of the province.

### **Data Collection and Analysis**

The focus groups used a semi-structured interview format. Issues to be explored were identified at the beginning of the interview; respondents were encouraged to describe their work and talk about the decisions they made as they provided nursing care. Probe questions, and verbal and non-verbal cues were used to fill in blanks, cue participants to continue talking, and indicate that more information was required. For example, following a description of the study, interviews began with the request: "Would you describe the nursing care that you provided to your patients today." Probe questions included: "What did you do in response to that situation?" "What were you thinking at the time?" "How did you decide what to do?"

Each focus group consisted of four to six nurses, and lasted approximately 35 minutes. It was decided to keep the group size and requested time commitment small because of the competing demands of patient care. The sessions were audio-taped and subsequently transcribed; anonymity was assured in the reporting and recording of results.

Ethnographic content analysis was used to analyze the data. Ethnographic content analysis is an inductive, theory building technique used to reduce recorded language to a set of categories (codes) so that selected characteristics within data can be identified (Altheide, 1987; Tesch, 1990). Analysis began with the development of a coding scheme. Transcripts were read to identify emerging concepts. Three people were involved to help ensure the validity of the emerging concepts. Concepts were consolidated into a

coding scheme. Data rules were developed; the coding scheme and data rules were applied to data.

Concept mapping was employed as a supplemental analysis strategy. A concept map is a visual representation of a conceptual framework. In concept mapping, displayed data are carefully examined in relation to concepts comprising the phenomenon. Mapping is useful in summarizing and integrating what is known about a phenomenon; identifying gaps and revealing inconsistencies; and describing and analyzing patterns. (Artinian, 1982; Burns & Grove, 1993; Miles & Huberman, 1994).

Matrices were used to display data. Conceptually clustered matrices were used to make connections between data (Miles & Huberman, 1994; Tesch, 1990). Displayed data were carefully examined, compared, and contrasted. Concepts, irregularities, patterns and possible explanations were noted. Analytical memos were used to document emerging findings.

### **Findings**

The most striking finding of this study is the identification of a constellation of complex decisions not fully described by current decision making processes or frameworks. These critical decisions were apparent in respondents' descriptions of their work, occurring after the intervention had been decided upon and prior to implementation of that intervention. Past descriptions of decision making identified that planning does occur prior to implementation, but the complexity of decisions within this phase has not been recognized. These decisions are categorized as **Implementation Decisions**.

### **Implementation Decisions**

Nursing work was described using nursing process terminology. Articulating decisions and the decision making process typically began with a description of activities performed. Beginning with tasks, participants then worked through the cognitive process used to arrive at decisions. Analysis revealed not only decisions made in selecting what actions and interventions were required, but also decisions made in determining how to implement that intervention. Table 1 illustrates these decisions.

Respondents discussed not only the decisions they made in selecting tasks and activities for which they were responsible and which they performed, they talked more often and in greater depth about the decisions they made in relation to implementing these selected nursing activities. Rather than discussing only those decisions about *what* nursing actions, interventions, or treatments were required, nurses focused on a complex network of decisions they made in determining *how* they would implement these activities.

As early as 1980, Lipsky documented the phenomenon of "street-level bureaucracy", where there was

**Table 1. Nurses' Implementation Decisions**

Who?	Who should be involved in implementing this intervention?
How Much?	What resources are required to implement this intervention?
How?	How will these individuals be involved? How will these resources be obtained and used? How will this intervention be implemented?
When	When is this intervention going to be implemented?
Where?	Where should this task be implemented?

“considerable discretion” exercised by front-line workers (such as nurses) in determining the nature, amount and quality of care provided. Respondents’ descriptions of their work in this study not only support Lipsky’s contention, they also revealed the considerable discretion inherent in nursing decisions.

**Who should be involved in implementing this intervention?** A complex network of interactions, requiring collaboration and a variety of inputs was described. Discretion was evident in the determination of whether or not a nursing role was needed, and if so, the boundaries of that role. Nurses considered the quality and competency of their role, including how adequately the role would be fulfilled.

The nature of the nursing role was determined: educator, comfort provider, care provider or patient advocate. Nurses described themselves as: “case manager”, “facilitator”, “integrator of community services”, and “social marketer”.

The centrality of the role of patient and the family in implementing the selected intervention was reaffirmed. The roles of numerous individuals and disciplines involved in implementing health decisions, including (but not limited to) other nurses, nurse managers, social services, physicians, and non-health related agencies and people were considered.

**How will these individuals be involved?** Conjointly with the decision of who should be involved in implementing the required intervention, nurses deliberated how to secure involvement of these individuals; where they needed to go to access these individuals, including internal and external sources; and how these individuals would be involved in

implementing the intervention. Respondents spoke of a repertoire of leadership skills that were required to elicit the involvement of other individuals, including consultation referral, and delegation. They engaged in complex inter-professional communication, using negotiation, facilitation and “manipulation” techniques. Respondents deliberated the capacity in which they would involve others, such as collaboration, verification, and providing assistance. The following exemplars illustrate these complex decisions:

*The decisions related to how you're going to reach these people. Making decisions about who you are going to contact, and the best strategy.*

*Manipulating the situation in such a way so the patient gets what is needed, considering all the personalities involved.*

**How much - What resources are required to implement this intervention?** An area where a great deal of discretion was exercised was in determining the amount, number, and availability of resources required to implement the selected intervention. These decisions directly influence the quality and cost effectiveness of care delivered. Table 2 illustrates the discretionary decisions made by nurses in the determination of resources (How Much?). Respondents deliberated how much nursing care and/or follow-up was required, how much time was needed, and how much time was available. Discretion was evident in their decisions about how much time they were willing to spend garnering additional resources and on implementing the intervention.

The amount of personal energy respondents were willing to invest in the decision and in the interventions were components of resource allocation decisions. Nurses deliberated how involved they would become with the patient, how much effort the intervention required, and how much they would risk. The following exemplars depict decisions about resources:

*As far as time spent with the clients, it depends on what their needs are at the time. I may spend a half an hour with a client, I may spend an hour and a half, just depending on what's happening with them at the time.*

*It would be a factor in how you decide what to do. How involved do you become with him?*

*The decision is made gradually. It's what you don't do. It takes on a different flavor. That's a decision you're making all the time. How much do I push? How hard do I push?*

**Table 2. How Much? Nurses' Discretionary Decisions About Resources**

How much nursing care does this person need?
What resources (equipment, supplies, referrals, and other supports) are required?
How much of my time is required?
How much time is available?
How much time am I willing to spend?
How much follow-up is required?
How much of myself am I willing to invest?
How much will I get involved?
How much effort is involved?
How much will I risk?

**How will these resources be obtained and used?** In conjunction with decisions about the amount of resources available and needed, consideration was also given to how to obtain and use these resources. They decided where they needed to go to access these resources, including internal and external sources; and how to secure these resources.

*We contact agencies and say "this is a problem I have. I understand this to be your services, am I correct". If yes, then, "how will I refer?"*

**How will this intervention be implemented?** When determining how a selected intervention would be implemented, the best mechanism or approach for delivery of care was appraised. Considerable judgement was exercised in determining the strategy, communication technique, or teaching approach. The following exemplars illustrate decisions about how to implement the intervention:

*Through conversations, talking about services available and what they're interested in, we've started working on a soft type of approach. Trying little things, like offering half hour sessions, and letting the employees decide where they want to go from there.*

*I'm a little bit more fine tuned, I'm looking for anything to be a little bit off so that I can notify the doctor of things that need to be ordered...suggest things to the doctor that I think should be ordered... in a way so that it's their idea...How am I going to word this or phrase this so that I get what I want.*

*We show them, and then they do it with us there. When they feel comfortable, we let them do it.*

*Depending on which client you're dealing with...it's a decision as to how you're going to approach them...How you're going to reach those people and making all kinds of decisions about who you are going to contact and what the best strategy would be and the best approach.*

**When is this action going to be implemented?** High case loads relative to responsibilities and time are the two most significant resource problems faced by street-level bureaucrats (Lipsky, 1980). These problems were referred to in this study. When considering when the action should be implemented, key decisions identified by nurses included timing and priority setting. They determined when the activity would be implemented (before, during, after, at particular times of night or day), the urgency of the action, and where the activity fit in priority setting.

*You prioritize what really needs to be done immediately.*

*Should we call the doctor now, or should we wait until they come around at four o'clock?*

*You have to make the decision when to call them.*

*If we think there's any issue that needs to be followed through on another shift.*

**Where should this task be implemented?** The location where the intervention should take place was not a large focus. It was discussed, however. Community based respondents considered whether the intervention should be implemented in settings such as the home, clinic, or institution. Respondents within institutions considered particular locations within this setting.

*Right now we have a patient who should be on another unit.*

*Isolation, placement of patients...if they're compatible.*

*Where they are on the floor, and should they be closer.*

*We also make decisions about where, what type of community organization they can use.*

### **Implications**

These findings reveal the complexity of the nursing role within the health care delivery model. The study describes further the invisible cognitive processes used by nurses to plan and strategize how to implement selected interventions. The influence of these implementation decisions should not be underestimated. The considerable discretion exercised by nurses has a variety of impacts on understanding how organizational policies and mandates are implemented. They have significant influence on the amount, nature, and quality of health care that is provided.

These implications of these findings on the: a) description of nursing competencies; b) promotion of quality of care; c) cost-effective/efficient delivery of health care; and d) nursing education are discussed.

### **Nursing competency**

In the professional regulation of nursing, Nursing standards (expressed as minimal competencies for nursing practice) are the criteria used to determine whether competent nursing care has been provided. Competent nursing practice is described as not only the use of knowledge and skill to select appropriate nursing interventions, it is also the use of knowledge and skills to determine how to implement these interventions. It is misleading to assume that the selection of nursing interventions will result in either the implementation of these interventions or their implementation in the *best way possible*. It is nurses' Implementation (How) decisions that achieve the latter. Nurses' Implementation (How) decisions facilitate the optimal implementation of selected interventions. Nursing standards and nursing competencies that exclude nurses' Implementation (How) decisions are thus omitting an essential element in the regulation of nursing. The exclusion of decisions from nursing standards, nursing competencies, and subsequently from job evaluation systems demonstrates that these systems do not adequately describe nursing work.

### **Quality of care**

The exclusion of Implementation Decisions leads to an interesting dilemma regarding how health care is currently measured and evaluated. Current approaches, such as management by objectives, and measurement of outcomes, examine the link between the health care decided upon and the goal or outcome achieved. They do not consider Implementation Decisions in the evaluation of quality. An essential research agenda, then, concerns the extent to which the complex intellectual activities involved with nurses making Implementation (How) decisions are crucial to quality outcomes.

The implicit nature of this cognitive process compounds the question of whether it is possible to explicitly describe nursing work, capture its cognitive component, or measure the link between the cognitive component and the outcomes of nursing care.

### **Cost effective delivery of health care**

Systems currently used to describe nursing work, including those used to determine the most cost-effective way of delivering nursing care (i.e., NWMS), do not capture nurses' Implementation (How) decisions. As with decision making frameworks, they consider nurses' cognitive work to be concluded with nurses' What decisions. The assumption exists that if a decision has been reached about what needs to be done, then implementation will automatically follow.

NWMS have been criticized as not capturing all the elements of nurses' work. They focus primarily on physical tasks and do not accurately reflect the scope of nursing practice. They threaten the professionalism of nursing by relegating nursing to a series of tasks without recognizing the holistic way in which nursing and health care are provided (O'Brien-Pallas, 1988; O'Brien-Pallas, Cockerill, & Leatt, 1992; Phillips, Castorr, Prescott, & Soeken, 1992). Research on NWMS, such as that undertaken by O'Brien-Pallas and colleagues (1991), has revealed that up to 50% of nurses' work, including the cognitive component of this work, is not captured by these systems. By measuring only the time it takes to perform a specific task, neither the complexity of the task nor the service as a whole are considered (Halloran, 1983; Halloran, Patterson, & Kiley, 1987; Storfjell, 1989).

NWMS do not take implementation decisions into account. These systems do not capture the decisions made in choosing strategies to optimally implement selected interventions. The limitations of NWMS become very meaningful when one is considering whether or not a nurse is needed to provide patient care. Current measures, such as counting the numbers of registered nurses on duty or forecasting the amount of time to be spent with patients, do not consider the invisible time spent in considering how to implement interventions. Consequently, inadequate resources may be allocated to account for the time it takes to carry out the complex intellectual activity involved with making the decision of how best to provide care to meet patient needs.

### **Nursing Education**

The education of nurses influences both cost effective nursing practice and quality of care. A question that was generated from this research is whether nursing curricula contain content directed at Nurses' Implementation (How) Decisions. The sense is that while formal content may not be evident, education about Implementation

Decisions is an integral, yet implicit aspect of nursing education.

With the exception of courses on nursing management, in which information on resource allocation, decision making, interdisciplinary relationships, and communication skills such as delegation, negotiation and collaboration is provided, implementation decisions are not formally addressed. The lack of formal content in relation to Nurses' Implementation (How) decisions can be partially attributed to the exclusion of these decisions from both decision making frameworks and descriptions of nurses' work. A potential consequence of this lack of formal content is that practicing nurses may not be consciously aware that this is a nursing responsibility, may not acquire the language to express this responsibility, and may not possess ability to perform it competently and confidently.

### Conclusion

In conclusion, this research identified critical and complex components of the decision making process: the decisions made by nurses that occur after the selection of nursing intervention, and prior to the implementation of that intervention. These decisions address the complex network of interactions involved with enactment of the nursing role; the repertoire of leadership skills required to elicit the involvement of other individuals; discretionary decisions made in the allocation of resources; priority setting; and strategizing. Implications of these findings extend to nursing competencies; quality of care; cost-effective delivery of health care; and nursing education.

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