DEVELOPMENT OF ANTEPARTAL DATA SET ELEMENTS

FOR NURSE-MIDWIFERY CARE

Amy Jo Levi

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Dr. Jóyce Thompson
Supervisor of Dissertation

Dr. Susan Gennaro
Graduate Group Chairperson

Dedication

"Oh, had I a golden thread,

And needle so fine

I'd weave myself a magic strand of rainbow design

Of rainbow design...

In it I'd weave the bravery

of women giving birth --

In it I'd weave the innocence

of children over all the earth,

Of children over all the earth."

From "Rainbow Quest" by Pete Seeger

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ABSTRACT

DEVELOPMENT OF ANTEPARTAL DATA SET ELEMENTS FOR

NURSE-MIDWIFERY CARE

Amy Jo Levi

Joyce Thompson

The use of minimum data sets (MDS) has become integral to managing information in

health care. The American College of Nurse-Midwives is redesigning the Nurse-

Midwifery Clinical Data Set to function as a MDS to improve efficiency of data

management and aggregation of data for all types of nurse-midwifery practices. The

purpose of this study was to identify the processes of care used by certified nurse-

midwives (CNM) providing antenatal care to assist with the construction of the antepartal

portion of the Midwifery MDS. Donabedian's (1980) conceptual model for quality in

health care guided the study. A content analysis was conducted of 15 videotaped

antepartal visits performed by CNMs, using an instrument based on the nurse-midwifery

care process described by Thompson, Oakley, Burke, Jay, and Conklin (1989). In

addition, the CNMs who were videotaped reviewed their visits and provided commentary

to further describe their behaviors. A total of 442 recording units from the videotapes

were analyzed. Analysis of the videotapes and the CNMs' descriptions elucidated five

processes of care in addition to those described by Thompson et al.: use of

self/therapeutic personal presence, use of touch, use of humor, use of intuition, and the

experience of joy in their work. The identification of these five additional processes of

care indicate that the processes of care described by Thompson et al. are not inclusive of

all of the behaviors used by CNMs in the course of their care. Further investigation is needed to assist in the application of these processes of care to the development of discreet and descriptive behaviors that can be quantified as the antepartal data set elements.

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Chapter One--The Problem

Extraordinary pressure exists in the current health care arena to demonstrate the

clinical and economic effectiveness of health related practices. This is commonly done

by using data that link clinical and demographic outcomes of large populations.

Although comprehensive data sets satisfy this need, the minimum data set (MDS) is

easier to use. The minimum data set is one of the primary tools used to identify and

describe the content and outcomes of health related practices (Trevino, 1988). Set refers

to "all data elements and their definitions identified for one subject area...[M]inimum [as]

...defined ... [is] the least number of essential data items required among multiple users"

(Trevino, 1988, p. 8).

The concept of the MDS was first defined and described in 1969 as part of

an effort to establish standards and guidelines for the collection of health data

(Murnaghan & White, 1970). This initial definition stated that elements of a MDS need

to be useful to all those who collect the data, and those who would potentially use the

data for research, policy development, or administration. Therefore, the definition for

each data element cannot be ambiguous, must have meaning for a variety of applications,

and must be appropriately descriptive. Consequently, the MDS created for use in health

care generally include data elements in the categories of demographics, medical and

health status information, and service (e. g., provider) information (Rowitz, 1986).

The Uniform Hospital Discharge Data Set (UHDDS) was the first MDS to be

widely used. The UHDDS was adopted for use in conjunction with the Medicaid and

Medicare programs in 1975. It links service use to claims data, and enables comparisons

of demographic, economic, and epidemiological aspects of care. The contributions of the

UHDDS to aggregating data led to the subsequent implementation of a plethora of other

databases by the Health Care Financing Administration (HCFA) to describe program

beneficiaries and institutional service providers (Prescott, 1995). Since then, other MDS

have been proposed for ambulatory care, long-term care, health care facilities other than

hospitals, and selected health professions. Of these, only the long-term care MDS has

been implemented universally as the result of Federal legislation, the Omnibus Budget

Reconciliation Act of 1987 (Public Law 100-203). Other efforts to implement and use

MDSs have met with mixed success (Werley, Ryan, & Zorn, 1995), perhaps because

implementation requires acceptance of the concept of a data collection instrument for the

aggregation of universal data elements, as well as flexibility of those data elements in a

variety of settings. There also is difficulty linking data sets when a lack of comparability

in the definitions, codes, classification, terminology, and sampling frames of data

elements exists (Trevino, 1988).

Recently, the Board of Governors of the Division of Research of the American

College of Nurse-Midwives (ACNM) made a commitment to develop a MDS for use by

certified nurse-midwives (CNMs) in the United States. The Division of Research was

specifically responding to a need for an instrument for data aggregation; an effort to

develop a taxonomy of nurse-midwifery care was not undertaken because of the extent of

the current activity to develop classification systems to describe nursing care in general.

Investigation of a taxonomy of CNM practice would most likely duplicate work that has

already been undertaken. This data set of key indicators of midwifery practice will be collected into a national data bank for use by researchers, policy makers, and clinicians for the purpose of increasing the knowledge and development of CNM practice, and for linkage to other data sets with related information such as the UHDDS, the Uniform Clinical Data Set (UCDS) and the Medicare Provider Analysis and Review File (MEDPAR) (L. Walsh, personal communication, July 7, 1995).

A uniform, but not minimum, clinical data set specific to nurse-midwifery care, the Nurse-Midwifery Clinical Data Set (NMCDS), has been available since 1990 (Greener, 1991). Greener sought to construct the data set to capture the structure, process, and outcomes of care delivered by CNMs based on Donabedian's (1980) quality of care conceptual model. Although Donabedian's model was the conceptual basis for the NMCDS, Greener did not assign the data elements specifically to the structure, process, or outcome of care. Data elements were identified by consensus of an expert panel, and beta testing of the complete data set was performed. The final version of the data set includes 77 data items: 8 demographic items, 20 prenatal data elements, 43 intrapartum data elements, and 6 postpartum data elements (American College of Nurse-Midwives [ACNM], 1990). This data set has been made available for use by practicing CNMs as the "Gravidata" software.

The NMCDS was not intended to function as a MDS, and clearly has more than the suggested number of 25 or fewer data elements appropriate to a MDS (Trevino, 1988). Furthermore, it was not designed to link to other data sets, and because of the

difficulty of using the Gravidata software, has not been widely used by CNMs (L. Walsh, personal communication, July 7, 1995).

Dr. Leah Albers at the University of New Mexico sought to use the NMCDS to collect data for her NIH/NINR Shannon Grant study, Nurse-Midwifery Care and Perineal Outcomes. Although her study sites were already using the Gravidata software to record NMCDS data, Albers found that a large amount of data was not being recorded, and the construction of the data elements was not clear enough for accurate reporting to occur (L. Albers, personal communication, February 3, 1996). These observations led her to conclude that the NMCDS was better suited to the function of maintaining detailed practice statistics than for being used as a research tool.

Albers, therefore, has developed an intrapartal midwifery MDS tool for use in her Perineal Outcomes study, which was implemented in all of her study sites (Albers, 1996). The ACNM Division of Research has accepted Albers' work as the initial phase of the creation of an intrapartal midwifery MDS, and anticipates the addition of MDS tools for nurse-midwifery care during the antepartum period and for primary care (L. Walsh, personal communication, February 3, 1996). The purpose of the present study is to identify the components of nurse-midwifery antepartal care that can be included in the midwifery MDS as descriptors of that care. The components identified by this study represent the process of care, as described by Donabedian (1980). The elements of the process of CNM antepartal care, as identified by this study, will later be incorporated into the midwifery MDS.

Conceptual - Theoretical - Empirical Framework

Carveth (1987) underscored the importance of grounding nurse-midwifery research, like research for other practice-based disciplines, in a theoretical or conceptual framework.   Albers' intrapartal MDS was developed as an evolutionary outgrowth of the NMCDS, and continues to use Donabedian's (1980) quality of care model as the conceptual framework (L. Albers, personal communication, February 3, 1996). Therefore, the development of the proposed antepartal midwifery data elements also will be guided by Donabedian's conceptual model of the quality of care.

Donabedian's Conceptual Model

Donabedian's (1980) conceptual model for evaluating the quality of health care encompasses three main components of the delivery of health care: structure, process, and outcome. Structure is described by the institutions or conventions that dictate how care is given. This also can include institutional policies, treatment protocols, and published standards of care. Process refers to the method of care delivery, including the actions or interventions that occur within the act of providing care. Outcomes are the tangible, measurable phenomena that occur as the result of the care delivery process. They may be expressed as quantifiable data with direct antecedents in the process or structure of the care delivery process, or they may be qualitatively assessed results of care. In addition to providing guidelines for evaluating the quality of a health care service, these three categories provide the basis of a useful conceptual model for understanding the phenomenon of antepartal care.

The concepts of structure, process, and outcome as described by Donabedian correspond to the components of antenatal care in the following way: the structure of antenatal care consists of the guidelines for risk assessment, health promotion, and intervention activities that are used to support the progress of pregnancy -- what is done in the course of care. The process of antepartal care consists of the actual care-giving behaviors of the health care provider -- how the care is provided. The outcomes are represented by the well-being of the mother and infant at the end of the pregnancy, traditionally reported as mortality or morbidity data. Both the structure and process have an impact on the outcome parameters. Donabedian theorized that quality in the provision of care would be accomplished by ensuring continuity along these three parameters. This study was limited to the elucidation of the process component of Donabedian's model.

Theoretical Framework

The existence of an organized approach to the care of the pregnant woman to assist and encourage healthy pregnancy outcomes dates back to ancient times (Thompson, Walsh, & Merkatz, 1990). Ancient Chinese and Roman texts suggest dietary modifications and activity guidelines for parturient women. The first organized prenatal clinic was established in Dublin in 1858, as an outgrowth of the registration process required of women wishing to deliver in hospital, which was a novelty in that era. The prenatal program at the Dublin Maternity Hospital flourished because the identification of the risk factors for eclampsia -- headache, edema and albuminuria -- enabled early detection of this fatal disease, and averted many negative outcomes. The activities that comprise antepartal care have changed only slightly in the 140 years since, expanding to

accommodate new testing modalities, and new insights into the development of

pregnancy-related disorders (United States Public Health Service [USPHS], 1989).

Antepartal care has had a greater impact on pregnancy outcomes in the United

States than any other preventive activity during the puerperium since its widespread

implementation at the beginning of this century (Thompson et al., 1990). In the nine

decades since the promulgation of care for women during pregnancy became a societal

norm, rigorous evaluation of this care has only recently been undertaken. In the past

decade, the United States Public Health Service Expert Panel on the Content of Prenatal

Care initiated an examination of the "effective and efficient approaches for enhancing

maternal, infant, and family outcomes" that are being provided by contemporary

antepartal care (USPHS, 1989, p. 6).

The Expert Panel identified three categories of activities that comprise the content

of antepartal care: Risk Assessment Activities, Health Promotion Activities, and

Interventions to Reduce Medical Risk. These three components, which describe the

conventional activities of health professionals who provide prenatal care services, create

the structure of prenatal care. This structure dictates the number of visits and the specific

actions of health care providers during prenatal visits. The way that these activities are

accomplished is the domain of the process of antepartal care. The techniques used for

risk assessment and health promotion, and the types of interventions used by health care

professionals, constitute the actual process of providing antepartal care. Antepartal care

outcomes are described in the same way as pregnancy outcomes, that is, by the

occurrence of maternal and infant morbidity and mortality. The methods for measuring

these outcomes are not always uniform, but they are widely recognized as universal

health indicators (Gortmaker, 1979).

Lehrman first described what she identified as the "content components" of

antenatal care in 1981. These concepts describe the behaviors involved in providing care,

which reflect an aspect of the actual behaviors involved in the process of CNM care.

Morten, Kohl, O'Mahoney and Pelosi (1991) further validated these components for the

process of postpartum care delivered by CNMs.

The next contribution to the development of a theory of the process of midwifery

care was made by Thompson, Oakley, Burke, Jay, and Conklin (1989). Their middle

range theory of CNM practice was derived from an analysis of the behaviors of CNMs in

a variety of clinical care situations, and categorization of these behaviors according to the

aspects of CNM care as stated by the ACNM philosophy. The ACNM philosophy states:

> Nurse-midwives believe that every individual has the right to safe, satisfying
>
> health care with respect for human dignity and cultural variations. We further
>
> support each person's right to self-determination, to complete information and to
>
> active participation in all aspects of care. We believe the normal processes of
>
> pregnancy and birth can be enhanced through education, health care and
>
> supportive intervention.
>
> Nurse-midwifery care is focused on the needs of the individual and family for
>
> physical care, emotional and social support and active involvement of significant
>
> others according to cultural values and personal preferences.

The practice of nurse-midwifery encourages continuity of care; emphasizes safe, competent clinical management; advocates non-intervention in normal processes; and promotes health education for women throughout the childbearing cycle. This practice may extend to include gynecological care of well women throughout the life cycle. Such comprehensive health care is most effectively and efficiently provided by nurse-midwives in collaboration with other members of an interdependent health care team.

The American College of Nurse-Midwives (ACNM) assumes a leadership role in the development and promotion of high quality health care for women and infants both nationally and internationally. The profession of nurse-midwifery is committed to ensuring certified nurse-midwives are provided with sound educational preparation, to expanding knowledge through research and to evaluating and revising care through quality assurance. The profession further ensures that its members adhere to the Standards of Practice for Nurse-Midwifery in accordance with the ACNM philosophy (ACNM, 1989).

Thompson et al. enumerated 132 different care-related behaviors in their analysis. They were able to link each of these observed behaviors of CNMs providing care to one of the six concepts of CNM care described by the ACNM philosophy: safety; satisfaction; respect for human dignity and self-determination; respect for cultural and ethnic diversity; family-centeredness; and health promotion. These six concepts of CNM care were also identified with 24 components of care which comprise the CNM processes of care, encompassing all of the observed CNM behaviors. Appendix A enumerates the

24 processes of CNM care and their behavioral indicators derived from all the facets of clinical care as identified by Thompson et al. (1989).

The processes of CNM care as identified by Thompson et al. (1989) informed the theoretical basis for the antepartal data set elements by guiding the foundation of the content analysis instrument used in this study. The instrument was used to elucidate the identification of the processes of care in the audiotaped and videotaped antepartal visits examined in the study.

Empirical Indicators

The midwifery antepartal data set elements will attempt to document the actual process of antepartal care as it is delivered by nurse-midwives. The structure of antepartal care is represented by the guidelines for the risk assessment, health promotion, and risk reduction intervention activities performed during the prenatal visits as proposed by the Expert Panel, and as supported by the Philosophy of the ACNM. The outcomes of care will be measured by the intrapartal data set elements that record the pregnancy outcomes (Albers, 1996). The linkage of the empirical indicators (the data set elements) with their theoretical and conceptual elements is depicted in Figure 1. Each of the three components of Donabedian's (1980) model corresponds to an aspect of antenatal care. The antepartal and intrapartal data set elements will provide the empirical indicators for the measurement of these aspects of care.

Conclusion

This study specifically proposed to use Thompson et al.'s (1989) theory to identify the processes of care to be used to develop the data elements for inclusion in the

antepartal portion of the midwifery MDS. Following this study, an antepartal midwifery

MDS will be developed, using the data elements derived during the content analysis.

This midwifery MDS will subsequently be field tested by CNM practices to further

establish its content validity and interrater reliability. The Division of Research of the

ACNM has already been empowered by the ACNM Board of Directors to implement the

midwifery MDS as each portion is completed (L. Walsh, personal communication,

February 3, 1996). Further research will be required to establish reliability of the

complete data set as it is developed. It is anticipated that the findings of this study will

contribute to the development of a valid antepartal midwifery MDS that can aid in the

collection and aggregation of data that will facilitate the testing of the outcomes of the

antepartal care provided by CNMs.

Figure 1:
Conceptual, Theoretical, Empirical Model for Development of
a Comprehensive Antepartal Midwifery Data Set

Conceptual Model   Donabedian

                    Structure   Process   Outcome

Middle Range Theory   Risk Assessment Guidelines   CNM Process of Care   Pregnancy Outcomes
                       Health Promotion Guidelines
                       Interventions to Reduce Medical Risk

Empirical Indicators   Antepartal Data Set   Antepartal Data Set   Intrapartal Data Set
                        Elements   Elements   Elements
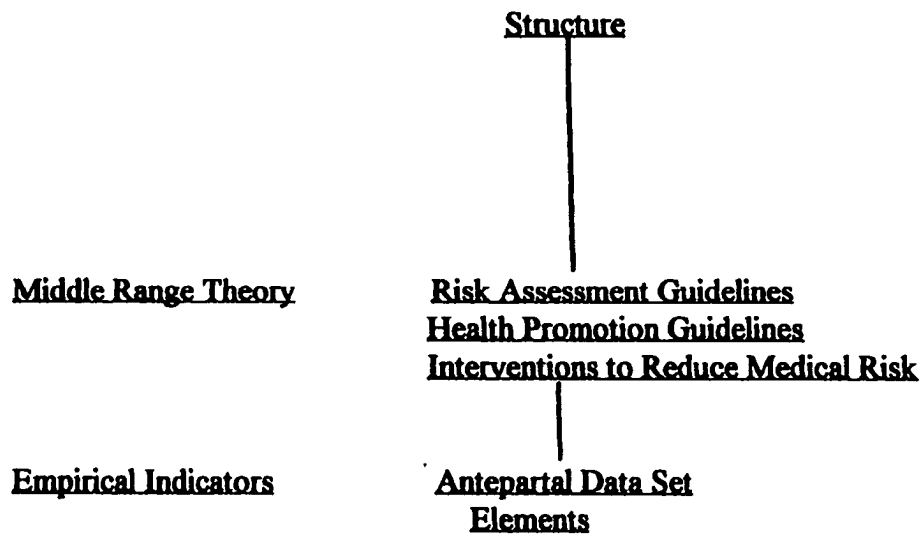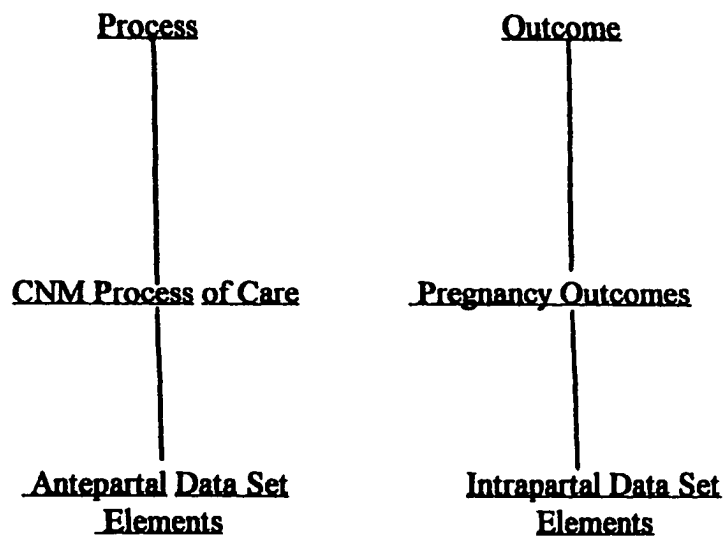
Chapter Two--Review of the Literature

MDS have been used to collect information about emergency room injuries (Irving, Norton, & Langley, 1994); the care of nursing home residents (Phillips, Chu, Morris, & Hawes, 1993; Hartmaier, Sloane, Guess & Koch, 1994); ambulatory care (Hutchinson, 1991); and nursing management (Huber, Delaney, Crossley, Mehmert & Ellerbe, 1992). The nursing management MDS is the only nursing specialty MDS to have been developed. That MDS was identified to assist the collection of nursing management information not included in the Nursing Minimum Data Set (NMDS) that has a direct influence on management outcomes as well as patient outcomes.

The lack of inclusion of activities in the UHDDS specific to nursing care created the impetus for the development of the NMDS. Although the UHDDS includes demographic and service elements, there are no elements that are descriptive of nursing care, such as nursing diagnoses, interventions, or outcomes. The NMDS was created to encourage the collection of the data that describe nursing practice so that this aspect of health care delivery systems did not go undocumented. It contains data elements designed to capture "minimum, common, core data to describe nursing practice" (Werley, Ryan, & Zorn, 1995, p. 21). The specific purposes of the NMDS are the establishment of comparability of data across clinical populations, the description of care in a variety of settings, the demonstration or projection of trends regarding care, the stimulation of research, and the provision of data for health policy and decision-making (Werley, Devine, Zorn, Ryan, & Westra, 1991).

Werley and her colleagues (1991) began development of the NMDS in 1985 using the expertise of clinicians, information systems specialists, policy makers, and health data experts. Like other MDS, the NMDS derived its data elements from existing data collection tools and the input of experts gathered from round table discussions, conferences, and surveys. The creation of MDS is driven by the identification of common data elements that are easily identified, easily retrieved from their original sources, have a common definition by users of the MDS, and represent universally understood concepts. There is no established methodology for their development, and different approaches are used based on what data are readily available. The goals for the use of the NMDS are similar to the goals of all MDS -- to describe care in a concise, uniform manner for ease in aggregating and analyzing it.

The NMDS encompasses three categories of data elements: patient or client demographic elements, service elements, and nursing care elements. The categories contain the following information:

Patient or Client Demographic Elements:

*1) Personal Identification

*2) Date of Birth

*3) Sex

*4) Race and Ethnicity

*5) Residence

Service Elements

*6) Unique Facility or Service Agency Number

7) Unique Health Record Number of Patient or Client

8) Unique Number of Principal Registered Nurse Provider

*9) Episode Admission or Encounter Date

*10) Discharge or Termination Date

*11) Disposition of Patient or Client

*12) Expected Payer for Most of This Bill (Anticipated Financial Guarantor for

Services)

Nursing Care Elements

13) Nursing Diagnosis

14) Nursing Intervention

15) Nursing Outcome

16) Intensity of Nursing Care (Werley et al., 1991)

The ten starred elements of the NMDS data elements are also components of the

UHDDS, which permits linkage between the two data sets. Moreover, the overlap

between the two data sets requires the addition of only six new data items to the

collection of information for the UHDDS. These six data elements are the four Nursing

Care Elements, and two Service Elements: Unique Health Record Number of Patient or

Client, and Unique Number of Principal Registered Nurse Provider.

The results of reliability and validity testing of the NMDS were published three

years after it was developed. This initial study examined the identification of the NMDS

elements from 116 patient records across four different nursing care settings. It also

demonstrated that average intercoder agreement across all NMDS elements was 91%

(Devine & Werley, 1988). Subsequent studies have produced similar results (Ryan &

Delaney, 1995). The NMDS has also recently been used to demonstrate the

measurement of the quality of nursing care (Delaney & Moorhead, 1995).

In 1990, the American Nurses Association (ANA) House of Delegates recognized

the NMDS as the MDS to be included in electronic patient record systems. Inclusion of

the NMDS in nursing information systems being developed by nurses and computer

vendors is increasing in patient care settings (Werley, Ryan, & Zorn, 1995). The ANA

Steering Committee on Databases continues to work toward the inclusion of NMDS

elements in other universal data sets, such as the United Medical Language System

(UMLS) developed by the National Library of Medicine, the Uniform Clinical Data Set

(UCDS) proposed by the Health Care Financing Administration (HCFA), and the

International Classification of Diseases (ICD) maintained by the World Health

Organization (WHO) (Lang et al., 1995).

Widespread utility of the NMDS has yet to be realized. This is partially due to the

lack of universal taxonomic classification systems for the four Nursing Care Elements:

nursing care diagnoses, interventions, outcomes, and intensity. Several classification

systems are still in progress (Grobe, 1995; Johnson & Maas, 1995), and the comparability

of the most widely used of these taxonomic systems -- the North American Nursing

Diagnosis Association classifications, the Omaha System classifications, Saba's home

health care classification system, and the Nursing Intervention Classification system --

has not yet been established (Werley, Ryan, & Zorn, 1995). The proposed International

Classification for Nursing Practice may assist the implementation of a universal system

of describing nursing care that will facilitate wider use of the NMDS (Clark & Lang, 1992).

The NMDS was created by a national group of experts following a three day conference in 1985 (Werley et al., 1991). The design of MDS in other disciplines and for other uses has followed a similar process of collaboration and negotiation among experts in data collection and the content area being represented (Trevino, 1988). The nursing home resident assessment and care screening MDS was designed in this way. Its reliability was subsequently established by statistical analysis of an aggregation of several nursing homes in five states (Hawes, Morris, Phillips, Mor, Fries, & Nonemaker, 1995). The Nursing Management MDS, for example, was the result of a Delphi survey technique (Huber, Delaney, Crossley, Mehmert, Ellerbe, 1992). Because most MDS are targeted to health services research, their development has largely been directed by those who will benefit most from their use. The NMDS stands out as a system derived from specific empirical knowledge, i. e., the science of nursing (see Figure 2).

The midwifery MDS is being proposed to stand alone, but will also have the ability to be incorporated into the NMDS by corresponding to the Nursing Care Elements. Because not all midwifery care worldwide is provided by nurse-midwives, a midwifery MDS that is to be used by non-nurse midwives is particularly valuable. The Omaha classification system has been successfully applied to CNM antepartal care (Levi, Marek, Jenkins, Whelan, & Gennaro, 1995). It does not address the elements of CNM intrapartal care, however. There is definitely a need for a separate midwifery MDS that is specific to midwifery care.

This study proposed to identify elements that describe antepartal midwifery care. These elements will be part of a comprehensive midwifery data set that will be used in the future to create a midwifery MDS. The antepartal data elements will be derived from the observation of CNM antepartal care that will be able to link to CNM elements of intrapartal care. The theoretical basis for categorizing these observations is Thompson et al.'s (1989) process of CNM care. Donabedian's conceptual model for the quality of care links the theoretical components to a structural framework that has been successfully applied to the evaluation of nursing care (Closs & Tierney, 1993; Shiber & Larson, 1991).

NIS

*Community
Data*

**Resources,
Health Problems,
Socioeconomic
-cultural status
Aggregate data on
population at risk**

Institutional Data
**Personnel Structural Finance
Variables**

Interpersonal Data

| Interventions | Nursing & Medical Orders | Goal (Outcome) |

Patient Data

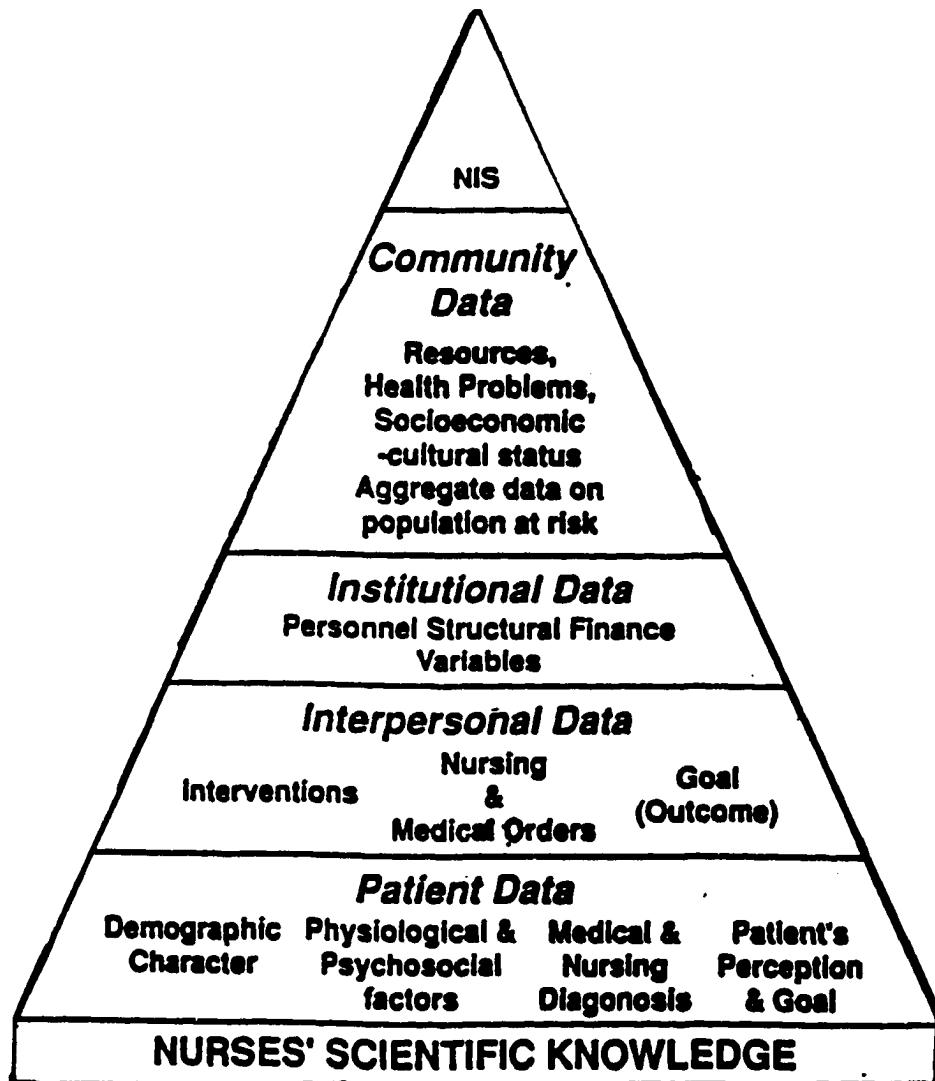| Demographic Character | Physiological & Psychosocial factors | Medical & Nursing Diagonosis | Patient's Perception & Goal |

NURSES' SCIENTIFIC KNOWLEDGE

Figure 2. Categories of a Basic Nursing Data Set.[1]

[1] From "The Nursing Minimum Data Set: Abstraction tool for standardized, comparable, essential data," by H. Werley, E. Devine, C. Zorn, P. Ryan, and B. Westra, 1991, American Journal of Public Health, 81, p. 422. Copyright 1991 by the American Public Health Association.

Chapter Three--Method

This study used content analysis of videotaped prenatal visits provided by a nurse-midwife to identify the aspects of Thompson et al. 's (1989) theory that occur during prenatal care. The behavioral indicators identified through content analysis will become the basis for the antepartal MDS elements. Krippendorff (1980) defines content analysis as "a research technique for making replicable and valid inferences from data to their context" (p.21). Inquiry into the content of printed matter was recorded as early as the eighteenth century in Sweden, when it was utilized to expose the secular content of religious hymns. It was subsequently used to analyze the content of print media, both in the popular press and propaganda. More recently, it has been used in the social sciences to explore the meaning of text, or to compare textual meanings with theoretical constructs (Krippendorff, 1980).

Content analysis has been used in nursing to explore such topics as patient responses to nursing interventions (McCain, 1988), to understand nursing roles (Beaton, 1990; Downe-Wamboldt & Ellerton, 1986), and to examine the beliefs of the recipients of nursing care (Flaskerud & Rush, 1990). These analyses have primarily used written documentation such as medical records, transcripts of patient interviews, and transcripts of nurse-patient interactions as the source of the content being analyzed. The use of content analysis is not, however, limited to written text. In fact, Krippendorff (1980) indicates that the methodology of content analysis is for the purpose of "analyzing data as symbolic communications" (p.11). The data analyzed, therefore, may be written or observed.

More specifically, the data for content analysis must be distinguishable, relevant, and analyzable (Krippendorff, 1980). The data must represent actual phenomena and be capable of being reproduced. Although not frequently used for content analysis, recorded visual images can fulfill these criteria.

Visual Data as a Source in Content Analysis

Investigation of the phenomenon of perception indicates that 80 percent of information comes to us through our eyes (Berger, 1989). More information processing is done in the eye than in the brain, so that the analysis of visual images provides a rich source of data for understanding specific events. Visual images are especially well suited to recording emotional and intellectual content, because of the strong relationship between visual experiences and feelings.

The inclusion of the visual recording of events into mass media has demonstrated the power of visual media to transcend some of the limitations of written language. Videotaped images have the power of suspending temporality from events by allowing them to be removed from real time (Gumpert, 1986). Although the use of videotaped events poses the issue of the authenticity of their occurrence because they are facsimiles of what has happened, this issue can be resolved when the videotaped activity is not attempting to be used as a proxy for actual situations. Videotaped interactions can function as acceptable substitutes for actual events because, although they distort the dimension of time because they are not simultaneous with reality, there is no evidence that they distort the visual representation of what occurred at the time the recording took place. The behaviors represented on videotape can only be appreciated as events that

occurred at the time at which they were recorded. Subsequent events can have no impact on their content.

Videotaping captures the nonverbal as well as the verbal aspects of communication. "The gestures of visual [hu]man[s] are not intended to convey concepts that can be expressed in words, but [rather] inner experiences, nonrational emotions, which would still remain unexpressed when everything that can be told has been told" (Carpenter, 1986, p. 359). Nonverbal codes, although more complex to decipher than language, are essential to communication (Ruben, 1988). The use of videotaped images for content analysis can provide an opportunity to further explore the nonverbal aspects of communication that occur in interpersonal interactions, although it does require the nonverbal to be transformed into language for the purposes of interpretation.

Prior to performing content analysis, the unit of analysis must be identified. Visual phenomena can function as units of analysis because, by virtue of their development in response to a direct visual stimulus, they "emerge in interaction between reality and its observer" (Krippendorff, 1980, p. 57).

Krippendorff (1980) distinguishes between sampling units, recording units, and context units as the fundamental categories of unitizing data. Sampling units are the individual elements to be included in a research project. Visual images can be classified as sampling units because they can exist independently of one another as separate examples of content. Recording units are the discrete, individual elements of meaning that are contained in sampling units that retain a specific consistent meaning throughout the content analysis and are coded into appropriate categories and enumerated. Context

units provide the backdrop of the meaning of the recording units. Context units may overlap and include many recording units.

Delineation of the recording units of analysis of videotaped content can follow Krippendorff's (1980) categories for defining them as physical, syntactical, referential, propositional, or thematic units. In this study, sampling units are defined in syntactic terms, that is, from the beginning to the end of the antenatal visits by a CNM. Recording units were defined propositionally, that is, as an interaction between the patient and the CNM or the patient's family member and the CNM. By this definition, recording units were constituted by one person doing something to or with another person, perhaps in the presence of third persons. This included emotions, gestures, responses, and in the second step of the data generating process, explanations by the CNM as to what was going on in the interaction.

Videotaped content also does not preclude the use of what is termed propositional units of analysis, another category of recording units described by Osgood, Sporta, and Nunnally (1956). These are simple attitude objects with verbal connectors to common meaning terms. For example, in videotaped interactions between a parent and child, the parent can function as an attitude object -- a nurturing individual. The parent's actions, both verbal and nonverbal, can produce common meaning terms to reflect the complexity of the interactions with the child; physical contact, facial expression, and tone of voice are all subject to the emotional context in which they occur. These common meaning terms then may take on separate meanings as attitude objects in and of themselves-- hugging denotes affection, frowning denotes disapproval, shouting denotes anger.

Krippendorff (1980) also identifies units of analysis as thematic units if they express content within a common category. This identification also applies to videotaped material. In the above example of parent/child interaction, the identified thematic units could be based on activity patterns, patterns of emotional expression, or changes in physical surroundings.

Because there is no literature utilizing videotaped recordings for content analysis, it has been suggested that videotaped content be commented on by the subject and the tapes and comments be analyzed by the researcher (K. Krippendorff, personal communication, April 9, 1996). Thus, each client/midwife interaction functioned as a unit of analysis. Fifteen client/midwife interactions were coded for the study. Each interaction was videotaped, and the comments of the CNM subjects was audio recorded, and the audiotapes were transcribed. This method provided the individual CNMs' own explanation of what was occurring during the visit, as well as the videotaped record of the activities that occurred at the time of the recording.

Sample

There is no method for calculating sample size, or the required number of sampling units, in content analysis; the goal of sampling is to produce a representation of the variety in the population being studied, to eliminate unreliability in the study sources, as well as achieving reliability of the coding instrument being used (Krippendorff, 1980). For this study, three separate nurse-midwifery practice sites representative of the three main sites of CNM practice were used to collect data: a home birth practice, a birth center practice, and a hospital-based practice. Individual antenatal visits were recorded until

enough coded data had been collected to assess reliability of the coding instrument.

These visits were not limited to any particular gestational age or developmental stage of

pregnancy; the process of care as described by Thompson et al. (1989) is applicable

across the scope of CNM practice. Both expert and novice CNMs were observed.

Primiparous as well as multiparous patients were invited to participate in the study to be

inclusive of the CNM response to the needs of both experienced and inexperienced

gravidae. Fourteen different women were videotaped during the antenatal visits (one

patient was videotaped twice). They ranged in age from 19 to 38 years; 4 women were

African-American, and 10 were European-American.

The sampling units for this study are 15 separate CNM/patient antenatal

visits, starting at the point at which the patient was greeted at the beginning of the

visit, and ending when the CNM and patient parted when their interaction was

over. Five visits were recorded at the out of hospital birth center, five at the

community-based clinic, and five at the outpatient office of the homebirth CNM

practice. Two different CNMs were recorded at both the birth center and the

community-based clinic, and only one CNM was recorded at the homebirth office,

for a total of five different CNMs. There are no uniform physical units for the

content analysis; the length of the visits varied based on the purpose of the visit

and the location of the setting. Initial patient visits lasted up to 75 minutes, and

routine return visits lasted from 12 to 29 minutes. The home birth practice had the

longest visits, and the community-based setting had the shortest visits (see Table

1).

Four of the CNMs are graduates of master's degree educational programs, and one is a graduate from a certificate educational program. Their experience as CNMs ranged from 2 to 12 years at the time of the study. The CNM in the homebirth practice is self-employed, and the two CNMs at the birth center were employees of the birth center at the time of the study. The two CNMs at the community-based practice were employees of an educational institution that supported their practice at the time the study was conducted. All of the CNMs in the study were European-American women; they ranged in age from 30 to 45 years.

The context units for the content analysis in this study are all the care behaviors of CNMs that can occur during antenatal visits. CNM antenatal care behaviors are proscribed by the concepts of the structure and processes of care. The structure of antenatal care is identified by the risk assessment activities, health promotion activities, and interventions to reduce medical risk (see Figure 1). The process of antenatal care corresponds to the behaviors that CNMs perform to carry out these activities. These behaviors were identified by Thompson et al. (1989) as the behavioral indicators for the components of the nurse-midwifery care process (see Appendix A).

The recording units for this study are the individual behavioral interactions performed by the CNMs in the course of conducting the antenatal visits. These interactions are both verbal and physical, ranging from the initial verbal greeting at the outset of the visit to the performance of the tasks involved in providing care. The number of recording units identified for each visit varied based on the length of the visit, the content of the visit, and the nature of

the visit. The range of recording units was 15 to 80; the largest number of

recording units identified (N=80) occurred during the 75 minute visit that took

place at the entry into antenatal care in the homebirth practice. There were 189

recording units identified at the homebirth practice; 154 recording units identified

at the birth center; and 99 recording units at the community-based practice, for a

total of 442 (see Table 1).

Table 1

Length of Antenatal Visits (in minutes), and Frequencies of Recording Units (R. U.)
Identified by the Content Analysis for each Antenatal Visit (N = Recording Units)

	Homebirth Practice		Birth Center Practice		Community-based Practice	
	Visit Length	R. U.	Visit Length	R. U.	Visit Length	R. U.
First Recorded Visit	29 minutes	30	20 minutes	33	17 minutes	19
Second Recorded Visit	20 minutes	26	12 minutes	20	13 minutes	20
Third Recorded Visit	23 minutes	21	14 minutes	21	12 minutes	15
Fourth Recorded Visit	27 minutes	32	18 minutes	30	14 minutes	19
Fifth Recorded Visit	75 minutes	80	45 minutes	50	36 minutes	26
Totals	174 minutes	189	109 minutes	154	92 minutes	99

Examples of the recording units are as follows:

CNM acknowledges and greets patient at door of exam room

CNM reviews patient record

CNM introduces concept of contraception for postpartum use

CNM directs patient to exam table

CNM lifts patient's blouse, measures the uterine fundus, performs Leopold

maneuvers, and uses doppler device to auscultate fetal heart tones

The recording units were also inclusive of the CNM's verbalizations during the visit:

"Alright, you're 0 negative, so today we'll do the Rhogam".

"Your total weight gain so far is only about 20 to 25 pounds, something like that,

which is just great. So you're on a pace to gain about 30 to 35 pounds".

"A good sign in a way...it shows that your body is being responsive to the

hormones of pregnancy...it does make you a lot more uncomfortable and

the extra pillows help when you're trying...when you're at all interested in

making love or something like that...it's very hard without extra pillows".

Coding Instrument

A coding instrument was developed for the videotaped portion of the antenatal

visits. A preliminary coding instrument based on Thompson et al.'s (1989) middle range

theory had previously been pilot tested on audiotaped transcriptions of two prenatal

visits. Because it did not demonstrate reliability, the instrument was refined for this

study. Pilot testing of the original instrument identified the need for specific coding

instructions, and clear definitions of terms if independent coders were to be using the

instrument.

The instrument for analyzing the recording units identified in the videotapes was

developed from the 132 behavioral indicators of the 24 components of CNM practice that

constitute the processes of CNM care as described by Thompson et al. (1989). The

instrument included each of the 132 behavioral indicators as examples of the processes of

care, but the category labels were abbreviated to be more succinct. The instrument was

used to analyze the transcripts of the videotaped antenatal visits (see Appendix B), and

identify the presence or absence of the behavioral components. The transcriptions of the audiotaped CNM descriptions of their care behaviors also were analyzed using the coding instrument to examine the association of the CNMs' own analysis with the categories identified by the theory. The behaviors that the CNMs identified that were not included in the instrument were subsequently grouped into categories of thematic similarity.

Face validity of the instrument was established by coding the videotapes used by Thompson et al. (1989) in their study. The videotapes were reviewed and coded using the instrument, with the expectation that all of the behaviors demonstrated by the CNMs in the videotapes from the earlier study would appear on the instrument. By using the instrument to code the videotapes used for the original theory-generating study, there was an opportunity to assess its semantical, correlational, and construct validity. The behaviors demonstrated by the CNMs in the earlier study were recognizable as those to which the instrument referred; they corresponded to the explicit meaning of the behavioral indicators, and to the overarching construct of prenatal care.

Procedure

Access to each practice site was requested from the practice director. Institutional Review Board policies were followed at each site. Nurse-midwife subjects were invited to enroll in the study by the researcher; these nurse-midwives then invited their antenatal clients to participate in the study. Informed consent was sought from both the client, her family members (if present), and the nurse-midwife providing care. Following the taping of the visit, each nurse-midwife was asked to view the videotaped visit and provide spontaneous commentary of each segment of the recorded visit. These responses were

simultaneously audiotaped. The audiotaped interview was transcribed for further

analysis. The audiotaped portion of the videotape was also transcribed for efficiency of

coding while watching the videotape.

Chapter Four--Results

In this chapter, the study results are presented. The numbers of the recording units identified during each visit are described, and the frequencies of the 24 components of the CNM process of care in the content analysis and the CNMs' review of the visits are presented.

Table 1 displays the numbers of recording units identified during each visit by the content analysis. The largest number of recording units occurred during the longest visits -- the initial visit at the beginning of the pregnancy (the fifth recorded visit at each site), and the visits at the homebirth practice. Table 2 lists the frequencies of recording units for each of the 24 components of the CNM process of care identified by the content analysis of the videotaped antenatal visits, and by the CNMs' own review of their visits. Because the components "Identification of Significant Others" and "Inclusion of Significant Others" represent such similar behaviors, they were combined for the content analyses, creating 23 different behavioral components.

The first behavioral component listed by Thompson et al. (1989), "Risk Assessment," was demonstrated by the activities of the physical examination and the questions posed by the CNM to determine the woman's well-being. This differs from "Problem Identification," a behavior that the CNMs demonstrated when attempting to elicit whether a woman was describing normal symptoms. An example of "Problem Identification" was described by one of the CNMs as "trying to integrate all of the rule-outs in the conversation" during the visit with the patient.

Table 2

Frequencies of Behavioral Components of CNM Processes of Care (N = Recording Units)

Component	Identified by Content Analysis	Identified by CNM Analysis
Risk Assessment	36 (10.7% of total)	30 (8.5% of total)
Problem Identification	37 (10.9%)	23 (6.6%)
Timely Intervention	17 (5%)	14 (4%)
Appropriate Intervention	23 (6.8%)	16 (4.6%)
Evaluation for Safety	7 (2%)	5 (1.4%)
Identification of Preferences	28 (8.3%)	22 (6.3%)
Mobilizes Resources	13 (3.8%)	11 (3.1%)
Meets Expectations	21 (6.2%)	24 (6.8%)
Minimizes Negative Aspects	13 (3.8%)	14 (4%)
Reduces Power Differentials	21 (6.2%)	33 (9.4%)
Applies Theory and Research	13 (3.8%)	14 (4%)
Accepts Person	25 (7.4%)	24 (6.8%)
Promotes Individuation	6 (1.8%)	12 (3.4%)
Promotes Self-Esteem	14 (4.1%)	15 (4.3%)
Identifies Customs and Values	13 (3.8%)	17 (4.8%)
Adapts Care to Preferences	11 (3.3%)	30 (8.5%)
Works for Cultural Relevance	2 (0.6%)	2 (0.6%)
Identification of Significant Others/ Inclusion of Significant Others	18 (5.3%)	16 (4.6%)
Family Member Health Assessment	3 (0.9%)	9 (2.6%)
Family-Centered	7 (2%)	3 (0.9%)
Health Maintenance	1 (0.3%)	4 (1.1%)
Health Assessment	2 (0.6%)	4 (1.1%)

Promotes Self Care	7 (2%)	9 (2.6%)
Total	338 (100%)	351 (100%)

"Timely Intervention" was identified by the CNMs' inclusion of appropriate tests during the visit or the timely scheduling of follow-up care. A behavior was identified as "Appropriate Intervention" when it was specifically geared to the woman being seen. An example of this occurred when a CNM performed a cervical exam on a woman complaining of what she believed were contractions of premature labor.

The component addressing "Evaluation of Safety" appeared less frequently than any previous components in both analyses. This refers to a discussion of the concept of safety in the context of the woman's clinical care. Perhaps this topic did not surface often because the observed visits were single episodes out of a continuum of care, and other opportunities to discuss this may take place at other visits. An example of this component occurred during the recorded visits when a woman with high blood pressure was evaluated by the CNM to assess the appropriateness of a home birth.

The third most frequently occurring behavioral component in the content analysis was the "Identification of Preferences." The CNMs often reviewed women's options, and asked them about their personal choices. The CNMs were identified as "Mobilizing Resources" when they discussed the women's plans and how they expected to achieve their goals. For example, the CNM assessing the woman for premature labor discussed at length her resources for getting rest at home and enlisting the support of her family to minimize her stressors at this point in her pregnancy.

Thompson et al. (1989) identified the next behavioral component as "Meets Birth Expectations of Client and Family." This was an important aspect of care in the birth center and homebirth practices, where the CNMs discussed plans for the birth at almost every prenatal visit. In the community based practice, the CNMs inquired about the womens' familiarity with a new hospital they would be going to at several of the visits that were recorded.

The CNMs' behaviors to "Minimize Negative Aspects" also varied slightly among the different settings for the antenatal visits. The homebirth and birth center CNMs discussed womens' experiences in institutional settings in contrast to the more intimate settings that they would encounter at home and the birth center. One of the CNMs described her behavior this way: "A lot of my activities in this first part of the visit are oriented toward preparing [the woman] for the worst and expecting and cultivating a sense of the best."

The behaviors that the CNMs demonstrated to "Reduce Power Differentials" included their body language, the way they spoke to the women, and their approach to the women as partners in their care. Each opportunity for physical contact with the woman was explained and her comfort and modesty were respected. In noting her attempt to be respectful of the women, one of the CNMs observed that "I always sit like that with people...I hunch forward some...I try to make people feel like they're equal."

The CNMs identified an example of "Applies Theory and Research" with almost the same frequency as the content analysis did (4% vs. 3.8%). This behavior frequently surfaced during explanations of testing, such as diabetes screening in the third trimester,

and treatments, such as the use of Rhogam for an Rh negative woman. The CNMs
referred to theory and research to support their application of clinical skills for patient
care.

The demonstration by the CNMs of the behavioral component summarized by
"Accepts Person" was another frequently identified component. The CNMs all
communicated directly and empathetically with their patients. They demonstrated their
acceptance of the women by listening attentively, reaffirming their well-being, and
showing them respect.

The differences between the behaviors demonstrated by "Accepts Person" and
"Promotes Individuation" are very subtle. This may account for the discrepancy between
the content analysis and the CNMs' own analysis (1.8% vs. 3.4%) for "Promotes
Individuation." Thompson et al. (1989) list different behavioral indicators for each
concept; "Acceptance of a Person" is demonstrated by interaction with a patient at the
patient's level of communication. "Promotion of Individuation," in contrast, is
identification of the patient as an individual with unique strengths and desires. An
example of "Promotion of Individuation" occurred when one of the CNMs reinforced the
woman's individuality by explaining that discussing the fetus' weight was designed to
help her "relate better to her body."

"Promotion of Self-Esteem" also is closely related to "Promotion of
Individuation." Thompson et al. (1989) described one facet of this behavioral indicator
as "listens to client's wishes, helps her identify needs" (p. 129). This process was
ongoing throughout each of the antenatal visits in the form of active listening and

explanation. It is clearly demonstrated by statements such as this one by a CNM reviewing her own care: "I try to feed women all the time...lots and lots of messages about how capable your body is...how you are fine and healthy and well and your body is wise and you will birth just fine."

"Identifies Customs and Values" is a behavior that the CNMs used to build rapport with their patients, and also to ensure that they would be individualizing their care. One of the CNMs described her use of an expression about Braxton-Hicks contractions as an acknowledgement of a local convention: "What her 'balling up basketball thing' is" (that is, a contraction that produces a uterine shape similar to a basketball) "something that I picked up from the community...that's what women say about their own bodies...so I kind of use her language as much as possible."

The CNMs identified that they used "Adapts Care to Preferences" almost three times as much as the content analysis (8.5% vs. 3.3%). This may be because they knew the women better, and saw themselves as tailoring their care more precisely to the women's needs, something that would not have been evident in the content analysis. This is an example of one of the CNMs describing an explanation to a woman in a way that would not have been identified by the content analysis: "I try and repeat a lot of what I say...if you had gonorrhea, chlamydia, if you have a sexually transmitted disease, I try to repeat it in words...different ways of saying the same thing." The CNM attempted to adapt her explanation for better understanding by the woman by using language that would be more recognizable to her.

The behavioral indicator "Works for Cultural Relevance" did not appear with much frequency in either the content analysis or the CNMs' reviews (0.6% in each). Thompson et al. (1989) contextualize cultural relevance to the health care setting. The infrequency of this behavioral indicator may be due to the episodic nature of the antenatal visits recorded; this topic may have been covered at other visits for these patients. Also, the cultural relevance of the antepartal care setting may be addressed more appropriately outside of a patient care visit.

Children or spouses were present at all but four of the recorded visits. When family members were not present, each CNM who was observed referred to them in some way. Children were included during the auscultation of the fetal heart beat, and husbands were encouraged to palpate the position of the fetus when they were able to do so. "Identification of Significant Others/Inclusion of Significant Others" also was mentioned by each CNM in her review of the videotapes.

"Family Member Health Assessment" did not occur with the same frequency as inclusion of family members in the visit. This may be related to the episodic nature of the visits; in the context of ongoing care, more opportunities may develop for CNMs to become actively engaged in participating in the care of other family members.

"Family-Centered" care is evidenced by the inclusion of the family members; the behavioral indicator refers to the actual evaluation of this aspect of care by the CNM and the woman and her family. The actual evaluation of care may not occur as a regular part of a woman's visit, which may account for the limited frequency of its appearance in the two analyses (2% in the content analysis, 0.9% in the CNMs' analysis).

The behavioral component of "Health Maintenance" is characterized by assessing and providing intervention for health maintenance. This component also occurred with limited frequency because the visits that were recorded were so focused on the pregnancy and its most immediate concerns. "Health Maintenance" was addressed at the initial prenatal visits when the CNMs would inquire about nutrition, exercise, health behaviors, and social supports. Similarly, "Health Assessment" behaviors occurred when specific health issues unrelated to the pregnancy were broached by the woman.

All the CNMs engaged in some aspect of the "Promotion of Self Care" by focusing on the woman as central to her own care. The specific behaviors that focused on this varied from a woman who wanted to monitor her blood pressure at home to a discussion with a woman about her use of an inhaler for her asthma.

The numbers of behavioral components and their proportion as identified by the content analysis of the visits and the CNMs' own review of their behaviors during the visits were very similar (Table 2). More behavioral indicators were identified by the researcher's content analysis than by the CNMs for the following five components of care: "Performance of Risk Assessment" (10.7% vs. 8.5%); "Early Problem Identification" (10.9% vs. 6.6%); "Appropriate Intervention" (6.8% vs. 4.6%); "Identification of Preferences" (8.3% vs. 6.3%); and "Family-Centered Approach" (2% vs. 0.9%).

The CNMs identified more behavioral indicators than the content analysis did for the behavioral indicators in which their interactions with the women were intentionally performed in a specific way. When the CNMs purposefully engaged the women in a

particular way, they readily identified that behavior in their review of the videotapes; the same behavior may not have been evident in the coding process because it may not have been easily recognized as purposeful. This occurred with the following four components of care: "Reduces Power Differentials;" "Promotes Individuation;" "Adapts Care to Preferences;" and "Assessment of Family Member Health Care Preferences."

The content analysis yielded some behaviors that were not addressed by the processes of care identified by Thompson et al. (1989). Similarly, upon reviewing the videotapes, the CNMs also identified aspects of their care that were not described by Thompson et al. (1989). Table 3 lists the additional behaviors identified by the content analysis and the CNMs when reviewing the videotapes. The behaviors identified by the videotape content analysis alone were congruent with two of the behaviors identified by the CNMs: the use of touch and the use of self as therapeutic. Three other behaviors were identified only by the CNMs: affection for their patients, with positive feelings about their work; the use of humor; and the use of intuition. The identification of these additional behaviors indicates that the components identified by Thompson et al. are not exhaustive.

The behavior not identified by Thompson et al. (1989) that was most frequently noted in the content analysis was the use of self as a role model, source of information , and source of emotional support that each CNM demonstrated throughout the visits. Thompson et al. (1989) identified "Personal Presence" (p. 127) as an appropriate intervention, but the CNMs also referred to themselves as sources of knowledge,

experience, authority, and feeling. A CNM performing an exam demonstrated this

personalized approach to the woman's care when she remarked:

"The baby's very active. I love that in a baby."

The inclusion in this statement of the CNM's own feelings reinforces the positive aspect

of the well-being of the fetus. This feeling is similar to that communicated by this

statement of a CNM to a woman's child:

"We're going to look at your mom's beautiful belly...it's a perfect size; great!"

Here, the CNM clearly communicates her own appreciation of the woman's body to the

woman's four-year-old son.

Table 3.

New Behaviors Identified by the Content Analysis and the CNMs' Review of Visits (N =
Frequency of Appearance)

Content Analysis:	N
Use of self as role model, source of information, and source of emotional support	23
Use of touching	19
CNMs' Review of Visits:	
Use of touching, including conscious use of body language, "laying on of hands"	11
Genuine affection for patients	4
Personal presence as therapeutic	9
Use of intuition	5
Use of humor	2

In the following example, the importance of the CNM's personal presence is reinforced by her reassurance.

"One of us will be with you at your birth...you'll know me better by then, so I

won't be a stranger."

When this CNM identifies herself with the woman in a very personal way, she reduces any disproportion in the relationship:

"That's such a pretty dress. I would wear something like that when I'm

pregnant...very nice."

When reviewing the videotapes of their visits, the CNMs also referred to their use of personal presence as other than an intervention. The CNMs described their personal presence as an intentional way of being with a patient to enhance the overall delivery of care. Reviewing a portion of a woman's history, one CNM described the process this way:

"This is actually just to listen to [her] story in a way that's going to make [her]

realize that [she's] done a lot...[she's] really strong and I think that that's an

important factor in the listening."

The CNM uses listening as an affirmation of the woman's strength and well-being, as well as a way to glean information. Another CNM, referring to the process of providing health education, elaborates that:

"The way in which I present the information, I'm hoping to enhance her sense of

control rather than taking that away."

The CNMs use intentional behaviors to add value to the utilitarian activities of information gathering and providing knowledge. They focus on building rapport, and communicating an empathic understanding. The CNMs' use of self extends beyond mere personal presence to a purposeful use of language, interaction, and occasionally physical touching:

"She gets a hug [at the end of a visit for possible premature labor]...I feel her belly [to] make sure she's not having some major...contraction."

A group of behaviors identified by both the content analysis and all five of the CNMs refers to their active and intentional use of touch and body language and what one CNM called "laying on of hands." This was referenced during the taking of blood pressures and the palpation of abdomens. One of the CNMs noted the "healing ritual" of applying a band-aid following the drawing of a blood test.

A third group of behaviors identified solely by the CNMs encompasses the genuinely positive feelings that they have for their work and for the women they take care of. One CNM, upon viewing herself performing an exam, said, "I love to feel pregnant bellies."

Another CNM noted: "I just enjoy people who are pregnant. Pregnancy is joyful and that needs to be a part of...everything I do."

When describing a woman as she reviewed the exam, one of the CNMs sighed, "She's just such a wonderful person...she looks so beautiful."

Three of the CNMs referred to the importance of humor in their work. "I can't do what I do without having fun doing it." While reflecting on a humorous interchange with a couple, one CNM said:

"Hey, we're all in this together, and [I] try to create a sense that this is an okay thing."

Another said that she uses humor to enhance a woman's ability to absorb and apply information.

On five separate occasions, a CNM, in reviewing her visit, referred directly to her use of intuition in the course of her care. Some of the behaviors that precede intuitive knowing are attentive listening, thoughtful reflection, and development of knowledge based on personal experience (Agan, 1987). All of these were described by the CNMs as aspects of their intentional behaviors during their visits. As experienced clinicians, their use of intuition is integral to their use of clinical judgment (Benner & Tanner, 1987).

Summary

The fifteen videotaped antenatal visits lasted a total of 375 minutes, and provided a total of 442 recording units for the content analysis (Table 1). The behavioral indicators of the components of the CNM process of care were identified a total of 338 times in the content analysis (Table 2). When the CNMs reviewed the videotaped visits, they identified an additional 13 behavioral components, for a total of 351. Six new behavioral components were identified by both the content analysis and the CNMs' reviews that had not previously been described by Thompson et al. (1989). These new behavioral components include "Use of Self;" "Use of Touching;" "Affection for

Patients;" "Therapeutic Personal Presence;" "Use of Intuition;" and "Use of Humor".

Chapter Five will discuss the relevance of these findings to the validity of Thompson et

al.'s theory, and the implications of these findings to the development of quantitative

descriptors of the CNM processes of care.

Chapter Five--Discussion

This study was developed to identify the processes of care used by CNMs during

antenatal care. Inclusion of these processes of care in the Midwifery Minimum Data Set

will enable CNMs to correlate their actual care behaviors with the outcomes of that care.

The theoretical basis for the study is the theory proposed by Thompson et al. (1989),

which enumerates 132 behavioral indicators for the processes of care rendered by CNMs.

These behavioral indicators functioned as the operational definitions for the processes of

care in the content analysis instrument used in this study.

The behavioral indicators identified by Thompson et al. (1989) range from

observable behaviors such as points of discussion in patient teaching, to activities that

could only be known following an extensive practice review, and not merely from the

review of a videotaped visit. These behaviors, unobservable during an episodic visit,

include activities such as the scheduling of patient visits, making referrals to other

providers, and participation in quality assurance activities. Because all of the behavioral

indicators could not be directly observed at the time of a visit, their absence from the

content analysis results has no bearing on conclusions regarding the empirical adequacy

of the theory examined in the study.

The frequencies of the behavioral components of the CNM processes of care (see

Table 2) are primarily descriptive of the individual visits that were observed in the study,

and are not intended to validate the theoretical basis of the content analysis, that is, the

theory proposed by Thompson et al. (1989). Comparison of the frequencies of the

behavioral indicators in the content analysis of the visits with the CNMs' own reflections

on the visits does, however, provide an opportunity to consider the intentional nature of the activities that constitute the behavioral indicators. Behavioral indicators that the content analysis identified more frequently than the CNMs did may demonstrate that the CNMs did not always connect their behaviors with the theoretical basis of their activities. The behavioral indicators that were more frequently identified by the content analysis, "Risk Assessment," "Early Problem Identification," "Appropriate Intervention," and "Family-Centered Care Evaluation" are all expressions of the purpose for which an activity may be performed. In reviewing their visits, the CNMs may only have described the most immediate reasons for their activities, without referencing other factors, which were primarily theoretical for them.

The increase in the frequency of identification of some of the behavioral indicators by the CNMs over that of the content analysis is most likely associated with their own knowledge of the patients and the CNMs' own personal preferences for certain caring behaviors. Personal knowledge of an individual would produce an increased opportunity to demonstrate several behavioral components of the processes of care as described by Thompson et al. (1989), particularly "Reduce Power Differentials" in the patient/provider relationship, "Promote Individuation," "Adapt Care to Preferences," and the provision of "Family Member Health Assessment." An increased level of intimacy with the patient would not have been as evident from the content analysis of the behavioral interaction as it would be to the CNM reviewing the patient care scenario. That increased level of intimacy was more apparent when the CNMs reflected on own their care.

Several of the behavioral indicators and the components of the care processes have overlapping meanings. This may have affected accurate coding both in the content analysis and the review of the CNMs' comments. An example of redundant behavioral indicators that are listed under more than one component of care are: "Does all the task analysis tasks," listed as a behavior of "Identifies Problems Early," and "Does all the task analysis tasks related to treatment" listed under "Treats Problems With Timely Interventions." In addition, "Listening" is a behavior that is listed as demonstrating "Performance of Early and Continuous Risk Assessment" and "Accepts Person As She Is." Identification of the motivation or intention for the listening behavior is beyond the scope of the observational portion of this study.

The components of the care process are similarly imprecise. "Reduces Power Differentials" has many of the same behavioral aspects of "Accepts Person as She Is"-- behaviors that result in focused communications and respectful actions. Both of these components of care remove barriers to an effective provider/patient relationship. This is accomplished through the promotion of trust, the use of communication appropriate to the woman's cognitive level, and the placement of the woman at the center of the care process, de-emphasizing the differences in the disparate roles of the woman and the CNM.

The components of "Adapts Care to Preferences" and "Identifies Customs and Values" also are similar, representing two points on a continuum of ensuring that the woman's care reflects her own values and beliefs within the provider relationship and the health care system. "Works for Cultural Relevance" is another point on this continuum;

it focuses specifically on behaviors that support the care delivery process, such as understanding the aspects of the care delivery system that have an impact on a woman's ability to express her preferences.

There are four components of care that address the inclusion of the woman's family in her pregnancy: "Identification of Significant Others," "Inclusion of Significant Others," "Family Member Health Assessment," and "Evaluation of Family-Centeredness of Care." The first two of these were combined for the content analysis because of their similarity. Although both are concerned with family-related matters, "Family Member Health Assessment" and "Evaluation of Family-Centeredness" have distinct meanings, and remained separate for the content analysis.

Re-examining the behavioral indicators of the processes of care described by Thompson et al. (1989) using the content analysis demonstrates redundancy and lack of precision among them. The overlapping concepts may be more effectively expressed by fewer broader, overarching terms. The behavioral indicators of the processes of care describe activities of care without recognizing the CNMs' own input into the activity. Reviewing the antenatal visits with the CNMs provided an opportunity to explore their understanding of the processes of care that were demonstrated in their visits.

Newly Identified Behaviors

The processes of care identified by Thompson et al. (1989) provide an important step in the development of a theoretical basis for nurse-midwifery care. The content analysis of the 15 CNM visits identified 5 important aspects of care not included in the original theoretical conceptualization: the CNM's use of self; the CNM's use of touch; the

expression of joy in the process of caring for pregnant women and their families; the use

of humor; and the use of intuition. These aspects of care may occur concurrently with the

other behavioral indicators, but they also exist as separate concepts. Further exploration

of these aspects of care is necessary to identify their importance in the processes of nurse-

midwifery care.

One of the aspects of care identified by the CNMs responded to their own

allusions to themselves and their use of themselves as points of reference for the women.

This was not addressed by any of the behavioral indicators described by Thompson et al.

(1989). This use of self is similar to the concept of the therapeutic relationship,

developed by Rogers (1965) in an exploration of the interaction between therapists and

their patients in psychotherapeutic encounters. Carper (1978) identified the concept of

"personal knowledge" (p. 18) in nursing to describe a nurse's use of self in order to

establish a relationship with a patient that would "promote wholeness and integrity in the

personal encounter" (p. 20). The interaction of nurses and their patients in the context of

providing care has been intensively studied to describe the essence of the profession

(Bottorff & Morse, 1994; May, 1990; Nelms, 1996; Widdershoven, 1999). Nelms (1996)

referred to the "caring presence" that nurses provide when they are with their patients

(p.368). This may be similar to the identification of the "personal presence" that

Thompson et al. (1989) include as a process of CNM care, although they provide no

further explanation of the meaning of the term.

In reviewing the videotapes of their patient care encounters, the CNMs deepen the

meaning of their "personal presence" to include an intentional focus on "being there" or

"being with" their patients. Their caring has a purpose: to reinforce a woman's self esteem, to share the joy of pregnancy, to communicate the normal, healthy aspects of a woman's changing body. Carper (1987) noted that nurses with increased levels of skill expand their ability to assert what she calls the "esthetic knowing" of a patient (p. 17). Similarly, the CNMs' reasons for caring are similar to what Tanner, Benner, Chesla, and Gordon (1993) describe as the differences that accrue to expert nurses who know their patients:

* Knowing the patient is central to skilled clinical judgment and is broader than what is captured in formal assessments of physical systems.

* Knowing a patient is a practical nursing discourse that points to specific nursing skills of seeing and involvement.

* Knowing the patient creates the possibility of advocacy.

* Knowing individual patients sets up learning about patient populations. (p. 277)

Although "personal presence" is similar to "being with" women, the CNMs elaborated on their relationships with the women to include knowing them in both a professional and personal way.

Physical touching is a further extension of nurses' caring presence (Estabrooks & Morse, 1992). Bottorff (1993) identified five types of touch provided by nurses in the course of caring: comforting touch, connecting touch, working touch, orienting touch, and social touch. The CNMs demonstrated each of these during their antepartal care, and in their own analyses of their visits, connected them with specific meaning. Their touch communicated reassurance, similar to comforting touch; affection, similar to connecting

touch; healing, similar to working touch; and acceptance of the woman and her family, similar to orienting and social touch. Each CNM noted that touch was integral to the care they provided.

The importance of humor in recovery from illness was first popularized by the writer Norman Cousins (1976). Parse (1993) relates humor to wellness and experiences of health; in their efforts to reinforce the well-being of their patients, the CNMs used humor to build intimacy and reduce power differentials in their relationships with their patients. The use of humor has not been studied extensively in nursing, but it clearly plays a role in both the patient and the nurse's sense of well-being in their relationship (Astedt-Kurki & Liukkonen, 1994; Struthers, 1999).

The role of intuition in the CNMs' review of their antepartal care is easily attributed to the fact that all of them are experienced clinicians (Benner & Tanner, 1987). CNMs readily acknowledge their use of intuition in clinical practice, and connect it to the historical origins of the midwifery profession (Kennedy, 2000; Levi, 1993). Intuitive knowledge is increasingly accepted as a source of knowledge among nurses (Fischer & Schraeder, 1986; Gerrity, 1987; Rew, 1988, 1989), and is an important component of the CNM care process.

The identification of these additional aspects of care suggests that Thompson et al.'s theory must be expanded to include both observable indicators and abstract concepts (Fawcett, 1999). In addition to the concrete behaviors described by the processes of care, there is a need to also include the concept of an intentionally compassionate approach to the woman that the CNMs identified as part of their repertoire of caring behaviors.

Fawcett (1999) suggested that this can be accomplished by the designation of an observable proxy for an indirect observable term. The touching, joyful, intuitive and caring activities of the CNM might all qualify as the observable proxies for the term "compassion," an overarching approach that guides the CNMs' care.

Recently, Kennedy (2000) proposed a model of exemplary midwifery practice, which enumerates three dimensions of practice based on a Delphi Survey of exemplary midwives and the recipients of their care. Kennedy notes that the three dimensions, the Dimension of Therapeutics, the Dimension of Caring, and the Dimension of the Profession, include all of the processes of care described by Thompson et al. (1989), as well as intuition, humor, and compassion. This suggests that these elements are valued by both the providers and recipients of care. It also proposes an alternative theory of midwifery care to that developed by Thompson et al. (1989).

The application of the present study findings to the identification of data elements for the Antepartal Midwifery MDS is complex. As noted earlier, data elements require a precision of definition that ensures a uniform understanding of their meaning. The overlapping meanings of many of the processes of care identified by Thompson et al. (1989) limit their application as MDS data elements. They are concrete expressions of a process that may not easily lend itself to crisp and finite definition because they rely on the CNMs' input into the process. Also, the identification of the five additional aspects of the CNM care process require further validation to include them in a theory of CNM care processes.

One approach to translating the processes of care into the antepartum data elements could be modeled after Morse, Hutchinson, and Penrod (1998). They proposed a method for developing patient assessment guides from qualitatively derived research. A four step process is described: identification of a theoretical component to be addressed; preparation of nursing assessment questions that reflect the theoretical component; identification of behavioral signs from the patient that correspond to the questions; and selection of nursing strategies that correlate with the theory.

A similar process could be used to link the processes of care and the behavioral indicators with a data element.   For example, the first theoretical component of care identified by Thompson et al. (1989), "Performs Early and Continuous Risk Assessment" has four behavioral indicators -- "Questioning, probing, clarifying during history taking;" "Listening attentively to responses, both verbal and nonverbal cues;" "Performing a screening physical examination;" and "Obtaining routine and specific laboratory tests." The behavioral indicators all refer to "Performs Early and Continuous Risk Assessment" which also is inclusive of several other care strategies such as laboratory testing, physical assessment, genetic screening, and ongoing surveillance of risk factors. The quantitative data element for inclusion in the MDS--Performs Risk Assessment--can reflect the strategies and behavioral indicators that produce the process of care: review of patient history, performance of physical assessment, initiation of diagnostic testing, and evaluation of objective data. The same process for evaluating the quantitative aspects of the theoretical components of the care processes could be followed for the identification of the other antepartal data elements, providing a blueprint for their interpretation.

Study Limitations

There were both methodological and theoretical limitations to this study. The content analysis procedure was limited by the use of a priori categories that were based on the theory of Thompson et al. (1989). This forced the classification of the recording units into closed categories, and eliminated the possibility of empirically identifying any additional processes of care.

Another methodological limitation was the lack of reliability testing of the content analysis instrument. Interrater reliability could have been established by the recoding of the videotapes by an individual who was not involved in the study, and comparing the completed instruments with those completed by the investigator.

Because the investigator is a CNM, it is possible that the coding of the transcripts was influenced by knowledge and understanding of the activities occurring during the antenatal visit. Similarly, in the process of reviewing the videotapes with the CNMs, the investigator may have communicated an unexpressed expectation that affected the CNMs' responses.

This study also was limited by the lack of a mechanism for identifying the motivations and intentions of the CNMs providing care. During their review of the videotapes, the CNMs were asked to describe what they were doing during the antenatal visit, not to discuss why they were doing it. Although their responses frequently did include their motivations, there was no opportunity for the CNMs to further elaborate on their own definitions of the process of care.

Implications for Future Research

A selected number of the CNM processes of care described by Thompson et al.'s (1989) theory have been demonstrated for the intrapartum by Oakley et al. (1995). Further theory testing for CNM activities in the care of women during primary care encounters is also needed. The development of an expanded theory of the processes of care may assist in the identification of MDS elements for primary care.

The foundation of nurse-midwifery education and practice is the Core Competencies for Nurse-Midwifery Practice (ACNM. 1997). Nurse-midwifery care is based on the Standards for Practice, the Core Competencies, and the Code of Ethics for Certified Nurse-Midwives (ACNM, 1997). The Core Competencies describe the "Hallmarks of Midwifery Care," and the following "Components of Midwifery Care:" "Professional Responsibilites of CNMs & CMs," "Midwifery Management Process," "The Childbearing Family," and "The Primary Care of Women," which provide the guidelines for CNM care behaviors. Eight of the 15 "Hallmarks of Midwifery Care" address aspects of the processes of care described by Thompson et al. (1989). These are:

Promotion of family-centered care

Empowerment of women as partners in health care

Facilitation of healthy family and interpersonal relationships

Promotion of continuity of care

Advocacy for informed choice, participatory decision-making, and the right to self determination

Cultural competency and proficiency

Skillful communication, guidance, and counseling

Therapeutic value of human presence (ACNM, 1997).

There is no identified theoretical basis for the Core Competencies; they have been

developed by consensus of practicing CNMs and CNM educators, and validated by

correlation with a periodic task analysis performed on behalf of the ACNM (Education

Committee, 1978; Roberts & Sedler, 1997). The acknowledgement of the behavioral

indicators of Thompson et al.'s theory in the Core Competencies would ensure the

incorporation of theoretically-derived processes of care into nurse-midwifery education

and practice. This could be accomplished by further research that examines the extent to

which the Core Competencies reflect the behavioral indicators from Thompson et al.'s

theory.

Additional research to further validate the deliberate use by CNMs of touch,

humor, intuition, and joy identified by this study is recommended. The incorporation of

these affective aspects of care into the theory proposed by Thomspon et al.(1989) as well

as the "Hallmarks of Midwifery Care" would provide an important acknowledgement of

their role in defining the practice of midwifery, especially for educators. These aspects of

care represent the missing dimensions of Thompson et al.'s (1989) processes of care--the

behaviors that support the caring, understanding, and communication that link the

cognitive processes of care with being "with women."

Donabedian (1992) has asserted that structure, process, and outcome are linked in

a progression: structure influences process, and process influences outcome. The

structure of antenatal care--the risk assessment guidelines, health promotion guidelines,

and interventions to reduce medical risk--guide the process of providing that care. This study was undertaken with the goal of identifying the process of antenatal care behaviors of CNMs so that they could be linked more effectively to the outcomes of those behaviors, as measured by the Intrapartal Data Set elements. The validation of the antenatal processes of care can now direct the identification of the antepartal minimum data set elements so that they may directly link the outcomes of care to the processes of care.

The theoretical basis for this study, the processes of CNM care proposed by Thompson et al. (1989), links the behaviors of the CNMs providing care to the cognitive processes that direct that care. The additional aspects of care identified by the CNMs--humor, joy, use of self, use of touch, and intuition--indicate that there are other factors to consider in the process of CNM care. These other factors suggest that the process of CNM care is informed by experience as well as clinical practice, and art as well as science, described by Carper (1987) as esthetic and empirical knowing, respectively. The education and practice of CNMs must be informed by both the practical and the compassionate dimensions of their care.

Appendix A

Behavioral Indicators of the Components of the

Nurse-Midwifery Care Process

Component 1: Performs early and continuous risk assessment for psychosocial,

behavioral, biological, and genetic factors.

Behavioral Indicators: Questioning, probing, clarifying during history taking.

Listening attentively to responses, both verbal and nonverbal cues.

Performing a screening physical examination.

Obtaining routine and specific laboratory tests.

Component 2: Identifies problems early.

Behavioral Indicators: Does all the task analysis tasks.

Participates in quality assurance activities.

Schedules regular, frequent appointments.

Applies current theory and research to nurse-midwifery care.

Component 3: Treats problems with timely interventions.

Behavioral Indicators: Does all the task analysis tasks related to treatment.

Participates in peer review; knows limits.

Schedules appointments according to client need.

Knows and understands implications of latest research related to

nurse-midwifery interventions.

Knows when to order specific tests.

Knows when to refer client to another provider.

Orders necessary tests at appropriate times to have complete data.

Seeks consultation in timely manner.

Refers for genetic counseling, testing, CVS, amnio, MSAFP.

Component 4: Intervenes appropriately.

Behavioral Indicators: Reassesses plan and alters appropriately using full range of

interventions from personal presence to high tech as needed.

Makes judgments and takes responsibility for necessary

interventions, whatever the type.

Follows protocols.

Recognizes and admits errors.

Provides health education.

Practices in accord with ACNM Standards.

Component 5: Evaluates care for safety.

Behavioral Indicators: Defines "safety" from midwife's and client's perspectives.

Negotiates plan of care with woman maximize both definitions of

safety.

Refers client out if cannot reconcile definitions of safe care.

Component 6: Identifies client preferences for pregnancy care.

Behavioral Indicators: Elicits and listens for client identification of preferences.

Tailors schedule of prenatal visits to needs and preferences of

client.

Initiates information seeking process about supplementary care

that can be adapted according to client preferences.

Identifies care options, including CNM or MD as the provider or

comanager.

Provides continuity of care including 24-hour access.

Component 7: Helps mobilize resources throughout pregnancy to meet client

preferences.

Behavioral Indicators: Is available to woman throughout pregnancy, to help her mobilize

and use resources including promotion of client self-determination

for progressing through pregnancy.

Assesses with client her existing and potential resources for

support and self-determination.

Plans with client how to implement those strategies.

Participates in implementing strategies according to appropriate

role and client needs.

Refers to specialized providers/services according to need.

Component 8: Meets birth expectations of client and family.

Behavioral indicators: Reviews and discusses the birth expectations for each client.

Offers options for labor, e. g., VBAC.

Identifies to client and family those expectations that can be met

and those that cannot be met.

Explains and interprets reasons for not being able to meet

expectations.

Recognizes that expectations may be dynamic and change over

time.

Makes birth plan with client. Explains reasons for any changes in

plan.

Communicates with client, including allowing adequate time

(within a realistic time frame) to listen to and respond.

Component 9: Minimizes negative aspects of health systems that affect client.

Behavioral Indicators: Presents information about nurse-midwifery care and practice

options early in pregnancy.

Reviews past history of client-system interaction and recognizes

negative aspects.

Refers client to another provider if not satisfied with CNM care.

Asks for immediate and ongoing evaluation and feedback

regarding satisfaction with care.

Encourages client to communicate effectively her preferences for

care to appropriate institutional person prior to labor.

Intervenes when other providers are not treating woman with

respect.

Interprets system to client when useful.

Physically and emotionally support client during labor.

Monitors system effects on client.

Expresses caring to client.

Interacts with system, helps set priorities (or when necessary sets

priorities as provider) and advocates within the system on behalf

of the client.

Component 10: Applies current theory and research in order to provide the

highest quality nurse-midwifery care.

Component 11: Reduces power differentials.

Behavioral Indicators: Interacts to promote mutual participation, not "telling".

Presents image of an expert who has mutual respect for client and

self.

Adheres to appointed start time of visit.

Honors commitments.

Provides information and behavior guidance that facilitates client's

participation in the care process.

Understands decision making process.

Assesses client strengths and deficits for decision making about

her health and pregnancy.

Introduces information at appropriate times during pregnancy.

Communicates information in content and style appropriate to

client's developmental stage and understanding.

Performs gentle, caring exams.

Admits own knowledge gaps.

Provides written as well as verbal instructions.

Component 12: Accepts person as she is.

Behavioral Indicators: Listens.

Communicates that the client is the most expert person about

herself.

Continually assesses client's current understanding, and her

acceptance and use of information provided.

Builds on client's existing knowledge.

Respects client's values and motives for progressing through

pregnancy.

Accepts client's cognitive and emotional levels.

Designs interventions that promote responsibility based on

realistic possibilities and safe care.

Understands and accepts life context of client including: family,

labor force status, student status, other life activities.

Promotes trust between client and provider.

Helps client identify problems so that she can continue problem

solving process.

Acknowledges unhealthy behaviors and unsafe choices.

Encourages women to change unhealthy behaviors and praises

efforts to do so.

Refers to another provider if client chooses unsafe alternatives.

Component 13: Promotes individuation.

Behavioral Indicators: Begins where client is.

Uses client's name.

Individualizes care.

Recognizes woman as separate individual from couple

relationship.

Facilitates growth throughout the childbearing process by working

with client to: assess, implement, monitor   implementation, and

adjust plans and make information credible, hopeful, and personal.

Identifies client's strengths and offers positive reinforcement for

same.

Supports her interest in learning by: showing relevance to client's

own situation, showing importance of new learning to client's

progress through pregnancy.

Assists woman and her chosen others to assume responsibility for

her health and that of infant.

Repeatedly asks client if she has questions or concerns; listens

attentively and responds appropriately.

Accepts shared responsibility for choices made with or for client.

Component 14: Promotes self-esteem.

Behavioral Indicators: Assists client to highest possible level of participation in her

childbearing experience.

Listens to client's wishes, helps her identify needs.

Promotes choices within limitations of setting or practice.

Supports/uses/builds on participation initiated by client.

Builds on client's abilities to participate by helping create a pattern

for success.

Promotes positive efforts.

Provides holistic care.

Expresses/promotes idea that woman/couple deliver infant, the

midwife assists.

Models positive self-concept.

Component 15: Identifies customs and values that influence the woman's view of

pregnancy, herself, and her expected behaviors.

Behavioral Indicators: Seeks information from client and research about customs, values

and myths relevant to the woman.

Assesses with client what customs and values are relevant.

Assesses client preferences.

Component 16: Adapts care, when possible, to the client's preferences.

Behavioral Indicators: Accepts relevant customs, values and preferences when not

harmful.

Knows how to adapt care to relevant customs, values and

preferences; thinks of new options.

With client, assesses and determines how to adapt care to relevant

customs, values and preferences.

Interprets existing care to client when preferences cannot be met.

Provides care in culturally relevant way (in own language, when

possible).

Offers a variety of teaching/learning methods.

Component 17: Works toward changing health care setting to be culturally

relevant.

Behavioral Indicators: Knows policies, procedures and both official and unofficial power

structures.

Spends time assessing, planning and implementing for needed

changes in the setting and elsewhere to increase client willingness

to continue health care.

Reviews options for implementing change with relevant clients,

groups representing specific customs and values.

Uses media, other community resources (local, state, national) in

working toward needed change.

Makes sure services are safe and accessible given customs and

values.

Models positive, culturally sensitive caregiving to other staff and

students.

Component 18: Encourages client to identify significant people in her life who

affect how she views herself, her pregnancy, and her health.

Component 19: Includes consideration of those significant persons during

discussions of pregnancy, family health, and during visits when

present.

Behavioral Indicators: Remembers people and situations.

Recognizes their presence and contributions to progress of

pregnancy and/or women's health.

Assesses with client and helps carry out ways to optimize

significant person(s) positive, and minimize their negative,

contributions to the progress of pregnancy.

Involves significant persons in care; e. g., ask partner if willing to

feel baby, listen to fetal heart; ask and answer questions; teaching

others how to help with comfort measures during pregnancy and

labor; helping others to identify and find ways to meet own

support needs.

Evaluates with woman/family extent to which care is family

centered.

Component 20: Assesses health needs and offers care or referral for other family members.

Behavioral Indicators: Identifies health needs of significant persons and assesses effect on progress of pregnancy or health of woman.

Offers appropriate care to the significant others either as part of client care or as separate clients, if appropriate.

Refers and follows up on referral.

Keeps focus on client, but is aware of larger context of client's family and environment.

Component 21: Evaluates with woman/family extent to which care is family centered.

Component 22: Provides health oriented assessment and intervention to maintain woman's health.

Behavioral Indicators: Assesses woman's strengths about: diet/nutrition, exercise, sleep, sexuality, social support, seat belt use, personal health behaviors, stress levels, other health concerns.

Supports current strengths.

Component 23: Provides health oriented assessment and intervention to enhance health of woman.

Behavioral Indicators: Assesses deficits in health promotion/disease prevention activities.

Provides information needed to improve deficits.

Encourages and facilitates needed changes in personal health

habits; e. g., prescriptions, referrals, behavior, or natural "recipes."

Provides crisis intervention or referrals if needed for client to

grow/remain healthy.

Component 24: Promotes/supports woman's self-care activities.

Behavioral Indicators: Identifies current self-care activities.

Reinforces appropriate self-care activities.

Teaches self-care activities appropriate to client's health needs.

Teaches self-care activities to relieve common discomforts of

pregnancy.

Appendix B

Content Analysis Instrument.

Component of Care/ Behavioral Indicators	Number of examples
1. Performs early and continuous risk assessment for psychosocial, behavioral, biological, and genetic factors.	
Questioning, probing, clarifying during history taking.	
Listening attentively to responses, both verbal and nonverbal cues.	
Performing a screening physical examination.	
Obtaining routine and specific laboratory tests.	
2. Identifies problems early.	
Docs all task analysis tasks.	
Participates in quality assurance activities.	
Schedules regular, frequent appointments.	
Applies current theory and research to nurse-midwifery care.	
3. Treats problems with timely interventions	
Docs all the task analysis tasks related to treatment.	
Participates in peer review. Knows limits.	
Schedules appointments according to client need.	
Knows and understands implications of latest research related to nurse-midwifery interventions.	
Knows when to order specific tests.	
Knows when to refer client to another provider.	
Orders necessary tests at appropriate times to have complete data.	
Seeks consultation in timely manner.	
Refers for genetic counseling, testing, CVS, amnio, MSAFP.	
4. Intervenes appropriately.	
Reassesses plan and alters appropriately, using full range of interventions from personal presence to high tech as needed.	
Makes judgments and takes responsibility for necessary interventions, whatever the type.	
Follows protocols.	
Recognizes and admits errors.	
Provides health education.	
Practices in accord with ACNM Standards.	
5. Evaluates care for safety.	
Defines "safety" from midwife's and client's perspectives.	
Negotiates plan of care with woman to maximize both definitions of safety.	
Refers client out if cannot reconcile definitions of safe care.	
6. Identifies client preferences for pregnancy or gynecologic care.	
Elicits and listens for client identification of preferences.	
Tailors schedule of prenatal or gyn visits to needs and preferences of client.	
Initiates information seeking process about supplementary care that can be adapted according to client preferences.	
Identifies care options, including CNM or MD as the provider or comanager.	
Provides continuity of care including 24-hour access.	
7. Helps mobilize resources throughout pregnancy to meet client preferences.	
Is available to woman throughout pregnancy, to help her mobilize and use resources including promotion of client self-determination for progressing through pregnancy.	
Assesses with client her existing and potential resources for support and self-determination.	

Plans with client how to implement those strategies.	
Participates in implementing strategies according to appropriate role and client needs.	
Refers to specialized providers/services according to need.	
8. Meets birth expectations of client and family.	
Reviews and discusses the birth expectations for each client.	
Offers options during labor, e.g., VBAC	
Identifies to client and family those expectations that can be met and those that cannot be met.	
Explains and interprets reasons for not being able to meet expectations.	
Recognizes that expectations may be dynamic and change over time.	
Makes birth plan with client. Explains reasons for any changes in plan.	
Communicates with client, including allowing adequate time (within a realistic time frame) to listen to and respond.	
9. Minimizes negative aspects of health systems that affect client.	
Presents information about nurse-midwifery care and practice options early in pregnancy or gyn care.	
Reviews past history of client-system interaction and recognizes negative aspects.	
Asks for immediate and ongoing evaluation and feedback regarding satisfaction with care.	
Encourages client to communicate effectively her preferences for care to appropriate institutional person prior to labor.	
Intervenes when other providers are not treating woman with respect.	
Interprets system to client when useful.	
Physically and emotionally support client during labor.	
Monitors system effects on client.	
Expresses caring to client.	
Encourages early postpartum discharge when appropriate.	
Interacts with system, helps set priorities (or when necessary sets priorities as provider) and advocates within the system on behalf of the client.	
10. Applies current theory and research in order to provide the highest quality nurse-midwifery care.	
11. Reduces power differentials.	
Interacts to promote mutual participation, not "telling".	
Presents image of an expert who has mutual respect for client and self.	
Adheres to appointed start time of visit.	
Honors commitments.	
Provides information and behavior guidance that facilitates client's participating in the care process.	
Understands decision making process.	
Assesses client strengths and deficits for decision making about her health and pregnancy.	
Introduces information at appropriate times during pregnancy.	
Communicates information in content and style appropriate to client's developmental stage and understanding.	
Charges reasonable fees.	
Performs gentle, caring exams.	
Admits own knowledge gaps.	
Provides written as well as verbal instructions.	
12. Accepts person as she is.	
Listens.	
Communicates that the client is the most expert person about herself.	

Continually assesses client's current understanding, and her acceptance and use of information provided.	
Builds on client's existing knowledge.	
Respects client's values and motives for progressing through pregnancy.	
Accepts client's cognitive and emotional levels.	
Designs interventions that promote responsibility based on realistic possibilities and safe care.	
Understands and accepts life context of client including: family, labor force status, student status, other life activities.	
Promotes trust between client and provider.	
Helps client identify problems so that she can continue problem solving process.	
Acknowledges unhealthy behaviors and unsafe choices.	
Encourages woman to change unhealthy behaviors and praises efforts to do so.	
Refers to another provider if client chooses unsafe alternatives.	
13. Promotes individuation.	
Begins where client is.	
Uses client's name.	
Individualizes care.	
Recognizes woman as separate individual from couple relationship. Facilitates growth throughout the childbearing process by working with client to: assess, implement, monitor implementation, and adjust plans and make information credible, hopeful, and personal.	
Identifies client's strengths and offers positive reinforcement for her strengths.	
Supports her interest in learning by: showing relevance to client's own situation, showing importance of new learning to client's progress through pregnancy.	
Assists woman and her chose others to assume responsibility for her health and that of infant.	
Repeatedly asks client if she has questions or concerns; listens attentively and responds appropriately.	
Accepts shared responsibility for choices made with or for client.	
14. Promotes self-esteem.	
Assists client to highest possible level of participation in her childbearing experience.	
Listens to client's wishes, helps her identify needs.	
Promotes choices within limitations of setting or practice.	
Supports/uses/builds on participation initiated by client.	
Builds on client's abilities to participate by helping create a pattern for success.	
Promotes positive efforts.	
Provides holistic care.	
Expresses/promotes idea that woman/couple deliver infant, the midwife assists.	
Models positive self-concept.	
15. Identifies customs and values that influence the woman's view of pregnancy, herself and her expected behaviors.	
Seeks information from client and research about customs, values, and myths relevant to the woman.	
Assesses with client what customs and values are relevant.	
Assesses client preferences.	
16. Adapts care, when possible, to the client's preferences.	
Accepts relevant customs, values and preferences when not harmful.	
Knows how to adapt care to relevant customs, values and preferences; thinks of new options.	
With client, assesses and determines how to adapt care to relevant customs, values and	

preferences.	
Interprets existing care to client when preferences cannot be met.	
Provides care in culturally relevant way (in own language, when possible).	
Offers a variety of teaching/learning methods.	
17. Works toward changing health care setting to be culturally relevant.	
Knows policies, procedures and both official and unofficial power structures.	
Spends time assessing, planning and implementing for needed changes in the setting and elsewhere to increase client willingness to continue health care.	
Reviews options for implementing change with relevant clients, groups representing specific customs and values.	
Uses media, other community resources (local, state, national) in working toward needed change.	
Makes sure services are safe and accessible given customs and values.	
Models positive, culturally sensitive caregiving to other staff and students.	
18. Encourages client to identify significant people in her life who affect how she views herself, her pregnancy, and her health.	
19. Includes consideration of those significant persons during discussions of pregnancy, family health and during visits when present.	
Remembers people and situations.	
Recognizes their presence and contributions to progress of pregnancy and/or woman's health.	
Assesses with client and helps carry out ways to optimize significant person(s).	
Involves significant persons in care; e.g., ask partner if willing to feel baby, listen to fetal heart; ask and answer questions; teaching others how to help with comfort measures during pregnancy and labor; helping others to identify and find ways to meet own support needs.	
20. Assesses health needs and offers care or referral for other family members.	
Identifies health heeds of significant persons and assesses effect on progress of pregnancy or health of woman.	
Offers appropriate care to the significant others either as part of client care or as a separate client, if appropriate.	
Refers and follows up on referral/	
Keeps focus on client, but is aware of larger context of client's family and environment.	
21. Evaluates with woman/family extent to which care is family centered.	
22. Provides health oriented assessment and intervention to maintain woman's health.	
Assesses woman's strengths about: diet/nutrition, exercise, sleep, sexuality, social support, seat belt use, personal health behaviors, stress levels, other health concerns.	
Supports current strengths.	
23. Provides health oriented assessment and intervention to enhance health of woman.	
Assesses deficits related to list above.	
Provides information needed to improve deficits.	
Encourages and facilitates needed changes in personal health habits; e.g., prescriptions, referrals, behavior, or natural "recipes".	
Provides crisis intervention or referrals if needed for client to grow/remain healthy.	
24. Promotes/supports woman's self-care activities.	
Identifies current self-care activities.	
Reinforces appropriate self-care activities.	
Teaches self-care activities to appropriate to client's health needs.	
Teaches self-care activities to relieve common discomforts of pregnancy.	

Appendix C

CONSENT FORM

Development of Antepartal Data Set Elements for Nurse-Midwifery Care

Purpose:

I,_____, have been asked to participate in
a research study to learn more about nurse-midwifery care. The nurse-midwifery service
that I am attending for prenatal care has agreed to ask women and their families to allow
their prenatal visits to be videotaped.

Confidentiality:

These videotapes will only be viewed by my nurse-midwife and the study investigator,
Amy Levi. They will not be shown for any other purpose, and my identity will never be
shared with anyone else, except as may be required by law.

Procedures:

The study procedure involves the videotaping of my prenatal visit. The visit will not be
altered or interrupted in any way. Following the visit, the nurse-midwife will review the
videotape with the investigator to discuss what she did during the visit. This review will
be audiotaped for further analysis by the investigator.

Withdrawal:

Whether or not I choose to participate in this study will have no effect on me or my care.
I can withdraw from the study at any time with no penalty.

Benefits:

There is no direct benefit to me of my participation in this study.

Compensation:

I understand that there will be no compensation for my participation in this study.

Questions:

I can get any further explanation or information about my participation from the investigator.

Subject Rights:

I understand that if I wish further information regarding my rights as a research subject, I may contact the Director in the Office of Regulatory Affairs at the university of Pennsylvania by telephoning 215/898-2614.

_____

Study participant   Date

_____

Witness   Date

_____

Investigator   Date

CONSENT FORM

Development of Antepartal Data Set Elements for Nurse-Midwifery Care

<u>Purpose:</u>

I,_____, have been asked to participate in
a research study to learn more about nurse-midwifery care. The nurse-midwifery service
by whom I am employed has agreed to ask women and their families to allow their
prenatal visits to be videotaped.

<u>Confidentiality:</u>

These videotapes will only be viewed by me and the study investigator, Amy Levi. They
will not be shown for any other purpose, and my identity will never be shared with
anyone else, except as may be required by law.

<u>Procedures:</u>

The study procedure involves the videotaping of my prenatal visit that I will perform.
The visit will not be altered or interrupted in any way. Following the visit, I will review
the videotape with the investigator to discuss what I did during the visit. This review will
be audiotaped for further analysis by the investigator.

<u>Withdrawal:</u>

Whether or not I choose to participate in this study will have no effect on me or my
employment. I can withdraw from the study at any time with no penalty.

<u>Benefits:</u>

There is no direct benefit to me of my participation in this study.

<u>Compensation:</u>

I understand that there will be no compensation for my participation in this study.

<u>Questions:</u>

I can get any further explanation or information about my participation from the
investigator.

Subject Rights:

I understand that if I wish further information regarding my rights as a research subject, I may contact the Director in the Office of Regulatory Affairs at the university of Pennsylvania by telephoning 215/898-2614.

Study participant   Date

Witness   Date

Investigator   Date

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