Outcomes Research:
Integrating Nursing Practice Into The World View

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"...our basic assumptions about the nature of truth and reality and the origins of knowledge shape the way we see the world and ourselves as participants in it. They affect our definitions of ourselves, the way we interact with others, our public and private personae, our sense of control over life events, our views of teaching and learning and our conceptions of morality." (Belenky et. al., 1969, p. 3)

Some of the most basic and most beautiful of life's traditions are in the health professions. Practitioners of human care and treatment throughout history have tended to view the world in ways different from those in other sectors such as business and industry. In return, societies have granted honor and privilege to health care practitioners. Those differences between health care and business are diminishing. We must now account for what we do, why, what we produce and how much it costs. Analysis of the multiple factors that led to the current situation is a study in itself beyond the scope of this paper.

The purpose of this paper is to explore some perspectives on outcomes research and the alternatives for integrating the nursing component into the larger picture. The main points are:

1. Health care has been removed from the realm of the sacred and has entered the era of accountability, most clearly signaled by the emphasis on effectiveness and outcomes research.
2. Each of us sees the world through our own conceptual lenses that usually are undefined and unrecognized by ourselves and others.
3. Nursing, like other health professions, defines the world, including outcomes, through the lens of its own discipline.
4. Assessment of health care outcomes requires not just multi-disciplinary, but meta-paradigmatic research.

A constant focus in this paper in this paper is the varied and multiple world views and the alternative approaches to outcomes research that are possible and likely with different conceptual lenses. Several building blocks provide the foundation for this discussion, including the traditions of the professional world, alternative conceptual lenses, nursing research and health care outcomes, and the necessity of multiple perspectives in the assessment of outcomes and effectiveness of health care.

The Professional World View

Like many other trades, the health care professions build on the history of the guilds of craftsmen. In a less complex era, guilds were the backbone of productive societies. Each guild was entrusted by society to set the standards for the trade, train its new practitioners, monitor quality of work in meeting the standards, provide social identification, and promote a sense of community among its practitioners. Then as now, a fundamental tenet of the work group was service to the client - a person-to-person relationship. Focusing on the necessity and quality of their own work did not preclude an appreciation of the

overall societal complexity, through managing the larger picture was not the task of the individual craftsman.

In addition to the societal trust accorded to guilds, the health professions have enjoyed further protection by society. The religious origins of the health professions, especially nursing, the intimate nature of our work, and the fact that we watch over life and death have both promoted and permitted health care to be viewed in the realm of the sacred. Our social contract has been based on a trust and freedom from public scrutiny not accorded the world of business and commerce.

The social contract has been rewritten. Relman (1988) called the current stage "the era of assessment and accountability." Valhalla has fallen. Health care practitioners now work, not in cloisters, but in the open world of science and business. Accounting for outcomes and the structures and processes that produce them is a necessary and appropriate result.

Still, the traditions of the past give meaning and purpose to the work of current professionals, and allow each practitioner to construct a world view in the context of the discipline. The health care professional's sights necessarily remain at a personal level, the recipient of services and the service itself. Thus, the typical view of health outcomes is the specific effect on an action or treatment by a specific practitioner, e.g., actions toward alleviating symptoms and curing disease.

Facing the complexity of health care services and the demand for integrative activity, a new mentality is necessary. Instead of defining the world in the context of our disciplines, how do we *define our disciplines in the context of a modern complex world?* How do we retain the elements of one-to-one care and service - the micro level of analysis - and at the same time understand the power and influence of the organizational and societal context? How we approach those questions is a product of the lenses through which we see the world.

Alternative Conceptual Lenses

Just as there is not a single World View, no objective reality that is universally agreed upon, neither is there a singular definition of the approaches to define views of the world. Several perspectives are described in the literature. These alternative conceptual lenses give insight into nursing's definitions, approaches and dilemmas in outcomes research.

In his study of intellectual and ethical development in the college years, Perry (1970) defined four stages of development. The first is *basic dualism* in which the person views the world in polarities of right and wrong, black and white, we or they, good or bad. The second level is *multiplicity*. At this level the person realizes that authorities do not have all the answers and learns that multiple views may stem from fact, opinion, or individual preference. The third stage is *relativism subordinate* in which a person takes an analytical evaluative approach to knowledge, at least in regard to one's own sphere of work in a discipline. That stage is subordinate to the fourth level called *relativism*. At this level of greater maturity and personal freedom, the individual sees the truth as relative and understands that events have meaning only in the context in which they occur, and according to one's framework for perceiving those events. This highest stage of analysis and insight allows the individual to see that "knowledge is constructed, not given; contextual, not absolute; mutable, not fixed" (Belenky, 1969, p. 10).

Belenky and associates (1969) defined ways of knowing that in part reflect individual world views. *Received knowledge* comes from listening to the voices of others;

subjective knowledge is the inner voice and quest for self; *procedural knowledge* is based on the voice of reason with both separate and connected knowing; and finally *constructed knowledge* requires integrating the voices. Perry (1970) summarized these types as maturation of the intellect, i.e., development from the simplistic and passive to the complex and interactive. Belenky and associates (1969) regarded the ways of knowing as separate types, though one also might interpret them as developmental stages.

In contrast, Gioia and Pitre (1990) outlined four alternative paradigms for research and generation of knowledge: the functionalist and interpretive, the radical humanist and the radical structuralist. The functionalist and interpretive paradigms are similar to, but not synonymous with, the traditionally defined quantitative and qualitative approaches, or deductive and inductive methods. The goal of the functionalist paradigm is to search for regularities and to test in order to predict and control. The approach to building theory is refinement through causal analysis. In contrast, the goal of the interpretive paradigm is to describe and explain in order to diagnose and understand.

The radical humanist and radical structuralist approaches aim to describe and critique in order to change, and to identify sources of domination to guide revolutionary practices. The theoretical concerns and assumptions of distortion, domination, alienation, emancipation, liberation and so on, (Gioia and Pitre, 1990, p. 591) may be real, but likely cast these two approaches into marginality in the scientific world.

Gioia and Pitre discussed the differences but also the compatibilities of the functionalist and interpretive paradigms, including the questions they raise, the choice of methods, and what constitutes explanation. Their view is that "there is more to learn than any single view can account for" (p. 590).

Allison's (1971) analysis of the dynamics of the Cuban missile crisis is a dramatic portrayal of how different world views pervade decisions and perceptions of outcomes. He portrayed three models to explain what actually happened during those critical ten days that could have ended in a nuclear holocaust. The rational actor or classical model is based on the perspective that important events have important causes, and that action is a matter of strategic choice. By analyzing the strategic problem, the analyst argued toward one goal - that of rectifying the nuclear balance. In allison's definition, this approach proceeds as if it were simply describing an exercise of logical reasoning, choice and action in a "disembodied" fashion.

The organizational process model regards action as organizational output - asses what outputs of which organizations led to the outcome, i.e., the blockade. Organizational processes produced the awareness of the problem, defined the alternatives and implemented the action. This approach has explained an event when it has identified the relevant organizations and patterns of organizational behavior in which the action emerged. Thus, predictions have identified trends that reflect established organizational programs and fixed procedures. Thinking of this approach in relation to outcomes research, we see immediately that it may illuminate, but also may simply perpetuate existing organizational mechanisms/

Allison's third approach, the government politics model, focuses on the varied perceptions, motivations, positions, power and maneuvers of the players. This analyst regards action as political outcome - who did what to whom that yielded the action in question. Predictions are generated by identifying the game in which an issue will arise, the relevant players and their levels of power and skill.

Like others describing multiple views, Allison (1971) does not imply that any of these approaches is right or wrong. He concluded: "As we observe the models at work, what is striking are the differences in the ways the analysts conceive of the problem, shape the puzzle, unpack the summary questions, and pick up pieces of the world in search of the answer" (p. 249). Allison noted that these three perspectives were not mutually exclusive if analytical frameworks and conceptual lenses are defined. Ultimately each approach had some explanatory power. In the heat of the crisis, however, the President had to estimate which view was more accurate and therefore what action to take.

These and other views of our conceptual lenses use different words to convey a common thread. Each of us as individuals and groups brings our own world view to any given situation. In regard to outcomes research, nurses and others enact varied, often undefined, assumptions and perspectives. Assessing our current and desires positions will enhance both communication about and conduct of outcomes research.

Issues in Nursing and Outcomes Research

Professions have developed their practice over time through focus on the standards, activities and results of the discipline. Those efforts provide an essential base for outcomes research. To proceed with the conduct of outcomes research, however, nurses and other health professionals now must assess the assumptions and perspectives implicit in outcomes research. At issue are: the views of the nature of the problem, views on how to solve problems, and differing levels of analysis.

The *nature of the problem* in outcomes research can be stated simply as: determine what conditions and actions produce what outcomes. But how do health care professionals define outcomes, actions and conditions? We may wish to assume that the desired outcome of health car services is health of the population. Yet "health" requires an operational definition, a measure. Within and between health care disciplines, researchers vary in those definitions and measures. I submit that we will never understand and document health of populations if we continue to regard outcomes as what we do to people. Is the outcome the number of surgical procedures, or number of admissions?

Lohr (1988) observed that the definition of "medical outcomes" has shifted in recent years. The classic definition included "the five D's": death, disease, disability, discomfort and dissatisfaction. The shift has been toward more positive aspects of health including survival rates, states of physiological, physical and emotional health and satisfaction with health care services.

A wide scope of outcomes has been addressed in nursing research over several decades. A major emphasis has been the construction of valid and reliable measures, such as the work of Horn and Swain (1978). Other nursing research addressed differing levels of analysis to relate organizational variables to clinical processes and patient care outcomes (Hegyvary and Haussmann, 1976a, 1976b, and to apply a contingency model to assess relationships among structure, technology and quality of nursing care (Overton, 1977; Alexander and Randolph, 1985; Alexander and Mark, 1990).

These and other studies vary in the definition of outcomes. The dependent variable may be short-term change in the patient's condition, long-term general health status of a sample of patients, such as persons with a particular disease of disorder, or overall indicators of health status of a population. In some studies, however, outcomes are defined as organizational outputs: for example, levels of

staff performance, staff satisfaction, and costs per patient diagnostic group.

How researchers define outcomes is in part a matter of practicality. Even if the researcher recognizes the overall complexity of analyzing outcomes, it is very difficult to address a full scope of outcomes in a single study. Perhaps an even more basic issue in the move toward integrated outcomes research is the contrasting views of how to solve problems.

The alternative conceptual lenses previously described portray a *variety of perspectives and approaches to defining and solving problems*. The dominant paradigm in the sciences has been the rational actor or functionalist, deductive approach. *A causes B.* Therapeutic actions or initiatives cause designated effects. The interest in intervention studies signals a belief in this perspective. Guba and Lincoln (1989) wrote: "In the past, the methodology employed in evaluations has been almost exclusively scientific, grounded ontolologically in the positionist assumption that there exists an objective reality driven by immutable natural laws, and epistemlogically in the counterpart assumption of a duality between observer and observed that makes it possible for the observer to stand outside the arena of the observed, neither influencing it nor being influenced by it" (p. 12).

This approach is limited when it looks at variables out of the context in which they occur. Like Allison's analysis of the Cuban missile crisis, it assumes a linear chain that is disassociated from its complex environment, including organizational, social, and political forces. Even in controlled clinical trials, particularly with limited samples, there may be many variables other than the experimental treatment that explain significant amounts of variance in results.

Yet a logico-deductive approach, testing hypotheses under defined conditions, cannot be ignored. If practice is based on science, the technologies of practice must be subjected to the test of effectiveness. Recognizing the limitations of this approach and keeping the test in context are the true challenges.

In contrast, the interpretive approach has both an intuitive and scientific appeal of going to the source for clarification of phenomena. Studies of client perceptions, satisfaction, beliefs and practices are examples in this category. the value of this type of research is evident, for example, in the work of Swanson (1991) and Benner (1984) in their use of qualitative, interpretive methods to define variables and relationships among variables. This naturalistic approach is very useful in the current stage of development of outcome measures. Yet it is too limited for a comprehensive, complex societal level of analysis.

The main issue is not an *a priori* selection of functionalist or interpretive approaches to the definition and investigation of outcomes. The issue is the need to clarify assumptions inherent in each approach that cut off other routes of inquiry. Each approach, taken in isolation, provides a narrow prescription of what constitutes definition, procedure and explanation.

Theoretical and methodological views of how to solve problems may reflect Perry's (1970) stages of development, proceeding from dualism to multiplicity to relativism. The literature illustrates progression from basic dualism, that is, seeing measures as right or wrong, good or bad, to multiple views of methods and outcomes. Perry's third stage portrays a more analytical and evaluative approach to knowledge, yet still limits it to one's own discipline. Outcomes research in nursing has progressed beyond the "law of the tool", but still tends to be restricted to a disciplinary view. Current initiatives in the effec-

tiveness of health care services demand progression to the fourth stage, that is, relativism, which takes into account the overall context in which events occur and the fact that events have meaning only in the full context of life. Belenky and associates (1969) referred to that perspective as constructed knowledge or integrating the voices.

Contrasting views also reflect differing ways of knowing, each of which may be valid for certain types of information. Received knowledge is essential for building on past research. Procedural knowledge if necessary as practitioners and organizations struggle to define and continuously improve their actions. Achieving constructed knowledge requires combining alternative perspectives. Whether the outcomes analysis pertains to health care or to a missile crisis, several sources of information and ways of knowing may be useful.

In the past few years we have had many discussions about "nursing outcomes" and the necessity of measuring our own effectiveness. Studies that investigate the actions of a single provider group, be they nurses, physicians or others, run the risk of ignoring the context. To assess health care outcomes, I believe that each group of practitioners must define and measure their actions and the intended results, then integrate those disparate views. Thus both discipline-based and interdisciplinary research are necessary. Progressing to constructed knowledge, which would appear to be true outcomes research, requires discussion of another issue - *the level of analysis.*

Levels of analysis range from the individual, micro level to the most complex, macro systems constellation. Professional socialization teaches practitioners to center on the dyad of practitioner and client. Nurses, like other health care practitioners, are concerned with the care of individuals, and perhaps their families. Professionals learn to exercise clinical judgment at an individual level, in parallel with practitioners in other disciplines. The aim is an appropriate assessment, diagnosis, and treatment process to achieve the intended outcomes. But this process never is limited to the immediate interactions of two people. It occurs in a sociocultural, economic, political and organizational context, any part of which may affect both the processes and the outcomes, usually in ways we little understand.

The presence of groups of practitioners and groups of clients in organizations adds a layer of contextual variables to the challenge of analyzing health care services and their outcomes. Add yet another level - the community context with diverse populations, changing economics and multiple interests in health care - and the complexity is overwhelming. Analyzing the structures, processes, and outcomes requires including all relevant variables embedded in clinical therapeutics, individual and family conditions and responses, and multiple, interacting environments.

Outcomes research, then, contains many levels of analysis. At the micro level, controlled clinical trials investigate individual responses to therapy. The meso level included investigation of questions related to the provision of clinical services, such as staffing, job satisfaction, patient acuity, and other mid-range organizational and patient variables in relation to clinical and organizational outcomes. The macro level pertains to institutional, inter-institutional and social variables in relation to health of the population.

The case of infant mortality is an example of such complexity and the need for systems thinking and research. At an individual level, infant mortality can be reduced through prenatal care. Yet numerous other factors, including female literacy, income, level of education, and

ethnic minority status, also correlate with infant mortality. The relative importance of each variable and their interactive effects can be determined only in a comprehensive analysis that constructs and uses very large data sets (Hegyvary, 1991; World Bank, 1989).

Shortell and associates (1990) noted the complexity of such research and the need to integrate multiple perspectives: Quantitative approaches involving time series analysis, pooling of cross-sectional data, and multivariate modeling of outcomes must be integrated with qualitative approaches emphasizing single case studies and longitudinal comparative case studies..." (p. 298).

These issues and the components of outcomes research point to *the necessity of large sets drawn from multiple perspectives.* An issue for constant attention is clarity on which perspectives drive the data set and conversely how the data set supports or refutes each of the perspectives. The complexity of outcomes research, with large data sets of individual, organizational, social and economic variables, requires the technologies of modern information systems. Yet information systems *per se* will not resolve the dilemmas in outcomes research.

To illustrate that point, I refer to a recent experience with consultants in information systems. You may know that the University of Washington School of Nursing last year contracted to design and manage health care services at a retirement community in North Seattle. It includes 215 rental apartments, 30 assisted living units and a 74 bed nursing home (or a we prefer to call it, the nursing care center). Many of us with more background in acute care and community health frankly were surprised and appalled by the regulations and traditions in long-term care, many of them resulting in rampant deforestation! After only a few days in the facility, a resident;s record would already be at least an inch thick!

For many reasons, we begin a focus on information systems — design the records to fit in community context, cut the redundancies, and build a relevant, concise, useable data base.

Several of us spent several hours with consultants — and thought we were being clear in stating our objectives. Finally, a consultant's face lit up with the joy of discovery and ours with anticipation. We hoped he had "the answer." Instead, he said: "Oh, now I see: you don't want us to just automate the chart!

No, automating existing records add concrete to our shoes. The reflect fragmentation, narrow, provider-oriented thinking, procedural knowledge, and little about outcomes or effectiveness. Proceeding to the next stage of multidisciplinary, meta-paradigmatic research requires the design and use of very large data sets to integrate the multiple voices in outcomes research. However, another cautionary note is in order regarding very large data sets. Urging their development must assume the inclusion of only the "relevant" data. As George Elist wrote: "If we had a keen vision and feeling of all ordinary human life, it would be like hearing the grass grow and the squirrel's heart beat, and we should die of the roar which lies on the other side of silence."

Integrating the Voices

Previous sections have portrayed the challenges and difficulties the nursing profession faces in outcomes research. Those challenges are not unique to nursing and are shared by all disciplines involved. In fact is it not part of the human condition to apply our own conceptual lenses, be they professional, cultural, religious or whatever, to all parts of our lives? Aldous Huxley (1954) said in Doors of Perception: "We must preserve and if necessary intensify our ability to look at the world directly and not

through the half opaque medium of concepts which distort every given fact into the all too familiar likeness of some generic label or explanatory extraction" (p. 74).

Given that we all wear some kind of blinders, how is it possible in a field as complex as outcomes research to see life in the round? We regard the methods of science as necessarily impartial, yet it is clear that our own concepts, assumptions and world views pervade scientific processes. The literature about outcomes research has in recent years begun to show at least multiplicity and perhaps relativism in attending to multiple views of decisions about health care and potential outcomes. Wennberg (1990) discussed the high expectations of outcomes research promoted by the Agency for Health Care Policy and Research. These priorities focus on six conditions: angina pectoris, benign prostatic hypertrophy, gallstones arthritis of the hip, conditions of the uterus, and low back pain. Those conditions account for more than half of all in-patient surgeries.

The traditional approach in outcomes assessment has been a micro level analysis of intervention and effect. Do X procedures to yield Y changes in pathological state. Referring to outcomes research in general and to what has been learned to date from the efforts sponsored by AHCPR, Wennberg (1990) said: "This line of research will reveal, I predict, that for most conditions, rational choices among treatments require that individual patients understand the predicaments they face. The predicaments arise because there is seldom a single correct answer to a medical problem. Most conditions or illnesses entail a number of morbidities, symptoms and disabilities. Outcomes research will clarify the probabilities of the various outcomes for the various treatments, showing many to be effective in some respects that are important to patients" (p. 1203).

Nursing research also is attending to multiple variables that reflect different perspectives of outcomes. Examples include Valentine's (1991) assessment of caring in relation to outcome indicators of patient satisfaction, length of stay and postoperative clinical condition. Both provider-defined and client defined variables were measured in that study. Waltz and Strickland (1988) presented a volume of research findings about measuring client outcomes. Research reported in that volume includes assessment of the stress of discharge, outcomes after myocardial infarction, compliance, goal attainment, pain, risk, activities of daily living, fears, responses to chronic illness, coping behavior social support, functional assessment of the elderly, health beliefs, family well-being and outcomes of home care — certainly multiple outcomes and multiple views of how to study outcomes.

A recent nursing study illustrated the importance of combining approaches, i.e., both theoretical and methodological triangulation. In her continuing studies of organizational effects on outcomes of critical care, Mitchell (1991) used two approaches to study clinical and organizational outcomes. The system-structural view emphasizes the value of formal structure in stabilizing organizations during change. In contrast, the strategic choice perspective emphasizes the social creation of meaning surrounding organizational events. In her study of collaborative practice and clinical outcomes, she applied both views. The data supported both perspectives. Variations in clinical and organizational outcomes were partially explained by each of the different perspectives. As a result, Mitchell recommended triangulation, including multiple environmental contexts, in the study of outcomes.

Gioia and Pitre (1990) urged movement to an even broader view of the world in the conduct of research and construction of theory. They pointed out that: "A multiple perspectives view is not a demand for integration of theo-

ries or resolution of disagreements or paradoxes that inevitably emerge from theoretical comparison. Rather is an attempt to account for many representations related to an area of study by linking theories through their common transition zones" (p. 596).

Their prescription for growing beyond our limited conceptual lenses is the development of meta-paradigmatic views. Researchers already use triangulation in research. Gioia and Pitre (1990) urge multiple triangulations - a set of lenses above a set of lenses. Both theoretical and methodological triangulation are necessary to be adequately inclusive of the relevant perspectives and variables in any type of research. In their words: The notion of a metaparadigm view is roughly analogous to the notion of triangulation to achieve confidence in observations in more traditional approaches to theory building. The multiple perspectives view applies a kind of meta-triangulation, not across methods within a single theory or paradigm, as is currently in vogue, but across theories and paradigms" (p. 596).

Achieving this level of research requires health care practitioners, providers and researchers to broaden our conceptual horizons, approaching problems not simply from the point of view of our own discipline in parallel with others, but in an integrated way within and across disciplines, organizations and communities. Guba and Lincoln (1989) portrayed that possibility in what they refer to as the constructivist paradigm — a type of interpretive approach. They wrote: "...evaluations can be shaped to enfranchise or disenfranchise stakeholding groups in a variety of ways. Clearly there can be selective involvement of these stakeholders in the design and implementation of the evaluation... ...If there is to be a course of action which most stakeholders can agree, it can only be arrived at through negotiation that honors the separate sets of values and makes it possible for individuals to find a reason to support it, work at it, and feel good about it..."

Conclusion

This paper has discussed views of outcomes research and further integration of nursing into a larger world view. Now in the era of accountability, health care professionals are accepting the challenge to document outcomes of care. Yet the assessment of outcomes is one of the greatest challenges in health care research. Their definitions are elusive, difficult to validate and based on varying perspectives and world views. Nursing research has progressed dramatically to account for nursing practices and potential effects, and now moves toward integration with other components of the health care system.

Our challenge now is integrating the voices and world views through recognition of our individual, disciplinary, and societal perspectives. Some of our views are productive; others may not be valid — we may have to look in other directions that we have thought or preferred. Intensive collaboration among all involved in outcomes research will enable us to achieve that goal.

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