BETWEEN PRACTICE AND …

Ph.D. by Publication

Thesis submitted to the
University Graduate School
University of Technology, Sydney

Donna Kaye Diers
November 2001

Volume I

Certificate of Authorship/Originality

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of Candidate

Production Note:
Signature removed prior to publication.

Acknowledgements

The work of those who influenced the publications contained herein is made part of the text. The superb supervision, comradeship and undivided attention of Professor Jackie Crisp and Professor Judith Donoghue know no equal. I thank Jane Stein-Parbury, Cheryl Waters and Mary Chiarella of the Faculty of Nursing, Midwifery and Health for negotiating the bureaucratic rapids. Dean Jill White particularly inspired me to pursue this option. Nikki Solomon of the Faculty of Education was wonderfully collegial in educating me about the PhD by Publication. The comments of Professor Judy Lumby and Associate Professor Debora Picone as Assessors were singularly helpful. My good friend and colleague, Dianne Pelletier provided comfort, support, great food and very good feedback throughout. My colleagues at the Yale University School of Nursing and Yale-New Haven Hospital unknowingly gave me the space to do something that has come to be very dear to me, in the sunburned country I consider a second home.

New Haven, Connecticut USA
November 2001

Table of Contents

BETWEEN PRACTICE AND …

Abstract

This Ph.D. by Publication essay organises my work in four sections: Between Practice and Research; Between Practice and Clinical/Operational Management; Between Practice and Policy; and Between Practice and the Public. A context-setting introduction puts the work in the temporal frame of the 1960's through 2001 and announces the point of view taken on nursing: the reason for the existence of the modern health care delivery system is to provide nursing care. In the first section, the publications deal with the development of clinical nursing research methods. My particular effort was to conceptualise the relationship between nursing practice and research. The publications show how that relationship was actualised. The second section contains work done 20 years or so after that reported in the first section, but the work is closely related. Here, the publications deal with the extension of the notion of nursing practice research to clinical/operational management using the rich administrative data produced by casemix (Diagnosis Related Groups – DRGs). This body of work reveals nursing as resource. The third section holds literature review and policy analysis that provide the contexts for nursing practice. Publications deal particularly with the "expanded role" of nursing as nurse practitioner, nurse-midwife and nurse anesthetist. Research and policy are knit together in this section. In the fourth section, I connect nursing to public forums. The concluding section draws together the themes that have occurred throughout: valuing nursing and making the discipline visible and credible in terms the world understands. The thesis ends with a metaphor that makes research, operations and policy one with public practice: nursing as craft.

BETWEEN PRACTICE AND …

Introduction

The reason for the existence of the modern hospital is to provide nursing care. Nursing is two things: the care of the sick (or the potentially sick) and the tending of the entire environment within which care happens.

Those sentences capture the content of my original contributions. They are often quoted.

Patients are hospitalised, entered into home care or long term care because they need the 24 hour a day, 7 day a week service we call nursing. That nursing's first charge is the care of the sick is unremarkable. Calling attention to the second of nursing's charges – tending the care environment – positions nursing at the centre of the health care delivery system. "Environment" is a metaphor. The health service delivery system does not exist in a vacuum. Health policy and politics shape the quality and quantity of nursing's service and deserve study as much as care of the sick does.

While others have toiled to define the parameters of the discipline or solidified professional organisational, educational and political strategies, my target has been the practice of the profession: unlocking knowledge about nursing practice. That knowledge *values* nursing. Nursing comes to *own* the work, and to *claim* deserved and public *credit.* Nursing becomes visible – a player on clinical, operational and policy stages.

The theatre metaphor is deliberate. Nursing is a secret world, hidden behind the more publicly accessible performances of physicians and administrators. Behind the proscenium, nursing is stage management, even choreography (**Diers & Evans, 1980**). In this secret world is a rich language and understanding of human experience, not only of the patients we are mandated to serve, but of the range of human contacts with colleagues in all disciplines. Nurses know how the world of health service delivery works. My work has been making that knowing visible and credible.

Method and Organisation of the Thesis

The method for the PhD by Publication is mining the products of one's own mind. As one way to select publications, I performed a citation search. The bulk of citations to my work were to the inspirational or intra-professional

political writing. On the basis of that exercise, I added some publications I would not otherwise have chosen.

The publications selected are assembled in Volume II.[1]

After a brief context-setting section here, I take selected publications and the work represented by them to build a case for what is, could and should be (1) between practice and *research*; (2) between practice and *clinical/operational management*; (3) between practice and *policy*; and (4) between practice and *the public*. In the first section, the selected publications are primarily methodological. In the second, they are primarily data-based. In the third, they are primarily analytic. In the fourth, the publications translate nursing to a wider audience. The use of the conjunction "between" is not intended to suggest there is opposition of practice to research or policy or management. Rather, the word is chosen to suggest there is an arroyo with practitioners on one side and researchers, operational managers or policy-niks and surely the public on the other side. The publications build a bridge, create a language, develop a shared agenda anchored in understanding the same data/information.

The publications in "Between Practice and Research" were written in the early days of clinical nursing research in the USA. My work took the form of crafting the relationship between clinical problems in nursing practice and available (or invented) methodologies so that the tools of science could be made part of nursing's repertoire. This phase of the work culminated in my nursing research textbook, the first that focused entirely on conducting research in the real-world contexts of practice.

The second section, "Between Practice and Clinical/Operational Management" builds on the first although the publications were separated in time by 20 years or so. This section develops the notion that there is intellectual work to be done using practice-created data that live in contemporary computer-supported administrative information systems. These data speak directly to clinicians and managers bringing visibility to nursing, especially in hospitals, and providing nursing with ways to talk about the work

[1] The publications are arranged in order of citation in this text, not in chronological order. The reader is invited to turn to the referenced publication when it is first cited in the text. The first mention of a particular publication is in **bold**.

in the language of *data*, which is the language of management. In this section, the "practice" is operational questions of quality of care delivery to aggregates (generally nursing wards or clinically defined populations) of patients. This work brought nursing and casemix – the use of information spawned by the adoption of Diagnosis Related Groups in hospital information systems – together.

The third section includes publications that were, for the most part, produced in the temporal space between those in the first two sections, but stand separately as "Between Practice and Policy". Here the divide is between practice and institutional, regulatory, legislative or policy discussions. My agenda was to reveal the contexts for practice. "Advanced practice nursing" (nurse practitioners, nurse-midwives, nurse anaesthetists) – was challenging the physician-dominated USA healthcare delivery system. Nursing was also being internally challenged by the development of advanced practice roles.

Two agenda-setting papers on nurse practitioners in primary care use research critique as a method for exposing policy and political issues. This section also includes the only papers that have been written about nurse-midwifery and nurse anaesthesia in the context of an historical review of regulatory, policy and political issues. I intended the nurse-midwifery and nurse practitioner papers to become part of the mainstream of nursing's intellectual work so that nurse practitioners and nurse-midwives could be poised to provide leadership to the profession. A paper on the relationship between research and health care policy rebuilds a connection to the relationship of practice to research.

In "Between Practice and the Public" I took advantage of several opportunities to write in the "intelligent layperson" literature. The final step in advocating for nursing is to advocate in public forums where nursing is revealed and made available to participate in public discourse. The papers in this section required translating arcane nursing issues into understandable public concerns, in ways that caught the attention of influential people. The reason for the existence of the modern hospital is to provide nursing…

Nursing is a practice discipline. It grows and changes on the basis of (often unexamined) information. Research methods provide a way to order the experiences of practice so that, when studied, the scientifically credible

results come back to inform the practice environment. The best questions for research grow out of observed and experienced practice. My work has been making the tools of research available to the practice of nursing, and making the problems in practice accessible targets for the agent of change we call "research." The extension to operational problems of practice management was natural. The analysis in the policy publications carries this agenda forward to position nursing to become part of the solution to healthcare problems. Revealing how policy and politics operate equips nursing to make its unique contributions. Revealing nursing to the public opens the door to let nursing do just that.

The Context is Everything

The publications begin in the mid-1960's at Yale University. That was a time in the USA when nursing was moving rapidly into universities with the requirement to ground the discipline in research and to develop a recognisable nursing science. The oldest nursing research journal in the world, *Nursing Research*, began publication only in 1952.

In a monumental exercise of scholarship, Virginia Henderson and her research team at Yale University catalogued **all** of the studies in nursing from 1900 to 1960 in a four-volume series, the *Nursing Studies Index* (Henderson, 1964 – 1969). Henderson (1956a) and Simmons and Henderson (1964) summarised their review, concluding forcefully that the bulk of research in the field to that date had been about "the workers rather than the work." Miss Henderson's editorial plea, "Research in nursing practice – when?" (1956b), became the anchor for developing clinical nursing research – studies of nursing practice – especially at Yale but also elsewhere (Symposium, 1967; Gortner & Nahm, 1977; Wald & Leonard, 1964). Dumas and Leonard (1963) at Yale reported what is generally recognised as the first randomized controlled clinical trial (RCCT) in the discipline, testing the effects of nursing preoperative preparation on stress expressed as post-operative vomiting in the recovery room (Abdellah & Levine, 1965). This study was tiny by contemporary standards – 51 patients in all, in three replications. But it set the methodologic standard and broke through conventional wisdom that had said nursing was too complicated (or too "soft") to be subject to the standard scientific test.

While the circumstances at Yale were particular, the move to the development of nursing science and scholarship was national in this period, and shortly, international. Because there were few nurses with doctoral preparation, schools of nursing sought social scientists, some funded under government programs **(Diers, 1970a)**.

In most schools of nursing, this tended to produce a version of nursing science that was "applied sociology" or "applied psychology" or "applied anthropology" using the clinical setting as the laboratory for whatever the science was. Some social scientists found this an exciting collaboration and they developed programs of research with budding nurse scientists (Symposium, 1967; Glaser & Strauss, 1965; Quint, 1967).

At Yale, Professor Robert Leonard did not take the route social scientists at other universities did and impose his sociological theories on nursing. He believed that the proper role of the social scientist in nursing was to provide methodological options that could be selected, as appropriate, for the study of patient care problems (Leonard, 1957). That meant nursing faculty were free to examine nursing practice in as much detail as could be mustered without being tied to conceptual lenses from other disciplines.

Two other important additions to the Yale faculty were the logicians, Professors William Dickoff and Patricia James. Contrary to what was happening in theory development circles elsewhere, they helped us by elucidating the *kind* or *type* of theory that would speak to different kinds of nursing practice (or even non-practice) problems. Elsewhere, nursing theory development was taking the form of generating grand conceptual *content* webs that provided a perspective on the discipline, rather than on the practice, and that produced believers rather than scholars.

The major contribution of the work at Yale was to demystify the notion of theory by, among other things, calling it simply "a mental invention to some purpose" (Dickoff & James, 1968b). Dickoff and James brought with them a notion of metatheory – theory about theory – that included the kinds of theory that embody values. They argued that theory for a practice discipline must include what was then an anathema in social science – the notion of "should" or "ought" or "goodness," *normative theory* that incorporated the values of the practice discipline (Dickoff & James, 1968a;

Dickoff & James, 1968b; Dickoff, James, & Weidenbach, 1968a; Dickoff, James, & Weidenbach, 1968b). In spite of the fact that this period in the 1960's in the USA was tumultuous with civil rights and social change, social science theory was bogged down in "watching the world go by, *rigorously*" (Falck, 1968).

Yale University is very old (established in 1701) and has withstood many incursions. Those characteristics provided a rock upon which this tiny, fragile, upstart new/old[2] School of Nursing could build its enthusiasms, even if they were not politically correct in the field.

This was the context when I entered graduate school at Yale in 1962 and joined the faculty in 1964, and that context became important later as we led the advanced nursing practice movement to confront the established order.

[2] The Yale School of Nursing (est. 1923) nearly closed in the late 1950's as part of a larger move to eliminate professional schools from the University under then President Alfred Whitney Griswold. The School was saved by converting to graduate level specialisation as opposed to entry into practice programs, under the leadership of Dean Florence Schorske Wald. The new School of Nursing was granted permanent status again in the University in 1964.

BETWEEN PRACTICE AND RESEARCH

To examine the question of what the best kind of evidence is to support nursing practice, it is necessary to stipulate what nursing *is*.

"If we do not know what nursing is, how can we teach it, or practice it, or train researchers to study it? Obviously we do the first two, and we even license people as 'nurses', with some kind of standard to differentiate us from 'un-nurses'" (**Diers, 1970b,** p. 52). "…Before one does any research in nursing practice, he [sic] must believe that nursing is important. Otherwise it makes no sense to study it. If nursing has nothing to offer patients, why bother to test different nursing approaches for their effects on patients? And there does seem to be more than a little doubt both in and outside the nursing profession that nursing has anything significant to contribute" (p. 51).

The underlying question– to what purpose is definition needed – is rarely asked. "A definition of nursing might be, and as a matter of fact is, very different depending on whether the definitional requirement is in the law, in professional organizations' political turf statements, in nursing theory, in the public media, in job descriptions, or in conversations over dinner with one's family" **(Diers, 2001)**.

The move of nursing in the USA into universities, and the nearly simultaneous creation of master's level specialty curricula, seemed to make the discipline lose its definitional compass. If nurses were no longer to be "handmaidens to the physician" in the hospital school tradition, what were we? In the 1960's, nursing turned to science, especially social science, to save us – to provide new definitional space.

The young journal, *Nursing Research*, published a series of articles about the relationship of social science to nursing in 1963. One of the articles, by a social scientist, whinged:

> Nursing…is a highly diversified field and …these diversities in nursing are in the constant throes of change and redefinition – often resulting in uncertainty and confusion, disagreements and tensions about the field of nursing, its content, and the role of those practicing it (Sheldon, 1963 p 150).

This social scientist felt as if she and her science were being called upon to fix nursing's definitional problem. The first publication I ever wrote (with others) was a response to this comment as a letter to the Editor arguing that this was neither the proper construction of the problem nor the proper role for social science **(Ellison, Diers, & Leonard, 1965)**. Instead, we proposed that the matter of discipline definition be left to the discipline to work out. The role of social science should be to inform *particular* research problems, when the problem lies within the social science domain. If the problem is not a "social science" problem, then the theories and methods of social science have nothing to offer. We suggested that theories and methods were to be found or selected among; they did not come embossed with a disciplinary paradigm.

Focusing on the relationship of social science to research, rather than on interpreting discipline discourse made clear the role of the social scientist in nursing research. We tilted the balance from the nurse being the "helper" in social science research to nurses being able to direct research and collaborate with others who might bring their theories and methods to the project. "Once the nurse has decided what effects she wants to obtain or thinks she does obtain by her practice, the behavioral scientist can help as a consultant on methodology and in the measurement of the effects of practice" (Ellison et al., 1965, p. 71).

This was a departure from the way in which nursing practice and the sciences or social sciences had been viewed. In this view, nursing was no longer simply "applied science," "borrowing" theory from other disciplines, although there were heated arguments about whether nursing could ever be a "real" science, especially if the focus was practice (Johnson, 1968; Symposium, 1957; Wooldridge, Skipper, & Leonard, 1968). As the notions of "nursing theory" and "nursing science" began to evolve[3] the applied/basic argument faded away.

If nursing was not to be saved by borrowing social science then it was going to have to develop its own science.

[3] There is an enormous literature in the USA on "nursing theory" which does not translate internationally. The major works are usefully collected by Leslie Nicoll (Nicoll, 1997).

Apart from hortatory intended to convince the discipline to think differently about nursing research and infrastructure development, it was going to be necessary to create new ways of thinking about the association of research to practice. If we could not depend on social science for problem definition (although we might well count on social science for methods and procedures) we were going to have to invent our own ways to translate clinical nursing practice problems into research problems.

My effort was to equip nurses to see their practice issues as potentially solvable through research. That has to begin where nurses begin: the gripes, complaints, observations, curiosities of expert practice.

> A "problem" is something that seems wrong. It is a difference between two states of affairs, a discrepancy between the way things are and the way they ought to be, or between two sets of facts, or [between] what one knows and what one needs to know to eliminate the problem. A problem makes itself known as a feeling of discomfort…a gripe…[N]ot all problems are going to be researchable (and some will not even need research). The quality that makes a discrepancy a potential research problem is that it is a *difference that matters*….What makes a difference matter is its consequence in patient care. The appropriate focus for clinical research is the systematic study of problems in patient care **(Diers, 1971**, p 15).

If the source for nursing research wisdom was going to be nursing practice, then nurse researchers were going to have to pay attention to their colleagues in practice (if practicing nurses themselves weren't doing the research). The notion that all practicing nurses could also do research was attractive, but ultimately naïve.

Research requires emotional space for contemplation. The researcher must have the patience to plod through the detail of research design and analysis. Practice requires acute observation and swift action. Expert practitioners make the muscular leaps of insight that characterise expertise (Benner, 1983; 1984). That capacity can identify the truly important research problems. The habits of mind of the researcher and the expert practitioner are

not necessarily the same, which is why respectful collaboration is a more desired strategy to bring practice and research together.

In addition, the infra- and superstructures of nursing education, practice and research would need to devise mechanisms to support practice-based knowledge development. I suggested three initiatives: (1) that nursing masters and doctoral programs turn to develop their science out of practice, out of *nursing*, rather than social science; (2) that clinical institutions create positions for researchers in practice.[4] And (3) that the criteria for funding research projects used by the federal government and other funding sources "raise the standards for relevance [to practice], not relax the requirements for scientific rigor" (Diers, 1970b, p. 54). Incentives in service settings for research and in academe for practice in the form of promotion, salary increases and publicity were proposed.

These were radical proposals to a discipline striving for upward mobility by leaving the practice environment. The effect of concentrating nursing's research in practice at Yale during this period -- to begin the development of a science of practice that made sense to practitioners -- has been acknowledged by others who have reviewed the history of nursing research (Gortner & Nahm, 1977). These ideas now seem prescient for there is still work to be done on all of these initiatives.

If nursing was going to be guided by the new notions of theory proposed by Dickoff and James as referenced earlier, then we were going to need to think differently about research methods. No longer would there be a hierarchy, with experimental design at the top and qualitative study at the bottom. Now it became possible to set a new standard for excellence in research method: the extent to which the design (and its execution, of course) matched the clinical problem.

Dickoff and James had proposed that there are numerous uses of theory that can be grouped into four purposes: to *describe*, to *explain*, to *control or predict*, and to *prescribe*. Depending on the purpose of the inquiry, different methodologies that are "best" not on some external criterion, but best suited to provide the best test of the theory for the purpose

[4] Several such positions were eventually created in the USA but the model was independently developed more fully in Australia in the "Clinical Chair" positions.

intended can be selected. In this view there is no linear alignment of research methods from qualitative up through quantitative clinical trials.

My work took this framework from concept to implementation, fleshing out the notion of "levels of inquiry" specifically tied to nursing practice questions which could turn into research questions. In the 1960's, this became clinical nursing research, if not born at Yale, surely nurtured there. It is not possible arbitrarily to select a study design; the criterion for excellence of evidence is that evidence-producing strategy that best suits the research problem. For some problems, that will be the randomized controlled clinical trial (RCCT). But for other questions, it may be a qualitative analysis of narrative data, an exploratory observational study, a survey or correlational study, an epidemiologic investigation, or a program evaluation using triangulated data sources. There is no hierarchy of knowledge; intellectual work is different in *kind*, not in value. While evidence produced from experimental design is still the most credible (Making Health Care Safer, 2001), there is increasing recognition that other forms of evidence, including qualitative studies can be useful (Brown, 1999; Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996; Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000).

Practice Based Evidence

The process that converts an observation in practice to a research problem begins with a perception of a discrepancy. The discrepancy may be between what we know now and what we need to know, between two sets of facts, or between what is now and what ought to be.

> … a nurse went to work in the intensive care unit for the first time. She was struck by the incredible amount of noise. Solutions were bubbling, gasses were hissing, people were talking loudly, equipment clanked, patients moaned. The staff who worked there seemed not to notice, but the patients appeared exhausted when they were finally transferred out to floor care. The …nurse wondered just how much rest patients got in the intensive care unit and what effect their stay had on them **(Diers, 1979**, p.11).

Here, there is a discrepancy between what is (patients are exhausted) and what ought to be (they ought not to be because exhaustion is not good for recovery). This problem could easily have surfaced not in nursing practice but in industrial engineering, which might monitor noise levels in hospitals. But industrial engineers don't care about exhaustion. What makes a discrepancy into a nursing problem is that the difference between what is now and what ought to be is a *difference that matters*, and the "matter-ness" is a question of values. Not the kinds of values that horrify meticulous researchers, not biases nor distortions. The use of values in practice based research is in selecting problems that matter from the very beginning.

This process of analysis of practice problems to produce research questions or hypotheses is the essence of building practice based evidence.

Guideline for Analysing Research Problems

1. Identify and state the discrepancy
   - A. Why, or how, do you know there is a discrepancy? How did you come to feel it as a discrepancy?
   - B. How do you know if it's a difference *that matters*?
   - C. If the discrepancy were removed, what would the result look like? What are the implications of removing the discrepancy? Of not removing it?
2. Describe the significance of the discrepancy to practice and theory.
   - A. How big is it? How big a gap is there between what is and what should be or what's known and needs to be known?
   - B. What is this problem an *instance of*?
3. Analyse the nature of the discrepancy.
   - A. What are the two conditions?
   - B. What factors [variables] are involved in each?
   - C. How are the factors [variables] related? How do you know?
4. State the questions that need to be answered to remove the discrepancy.
   - A. What are the most important questions? Why?
   - B. How practical will obtaining the answers be? Consider your own resources – energy, time, money, interest, experience.
   - C. Select the questions to be answered.
5. Specify the type of study that is appropriate.
   - A. Have you identified factors? Relationships?
   - B. Do you have hypotheses or predictions or are you looking for them?
   - C. If you have hypotheses, what form do they take [correlational, causal]

(Diers, 1979, p 16)

I never intended that this guide become a part of a written research proposal. It was written to lead nurse investigators through the mental steps of turning a practice-based observation into something study-able. In addition, the guide was also intended to assist nurse investigators to mine their own experiences of practice, to tease out the subtleties, and especially to put the problem in its practice and theoretical context. Forcing a

confrontation with values was another not-very-hidden agenda. And trying to separate the important from the trivial was an attempt to focus nursing research's scarce resources on things that really mattered, that had a real potential to be changed. This wasn't about building nursing's knowledge to achieve academic recognition; it was about building nursing knowledge to embrace, enhance, improve, change, sculpt practice.

If problems in practice could be analysed in this way, the product would lead naturally, it was proposed, to fashioning the research design according to the kind of problem that had been produced. Problems for research would fall in one of the four levels of inquiry that linked kinds of questions with kinds of answers, and at the same time, related this new way of organising research design to already available types of studies:

Questions, Study Designs, Answers

Level of Inquiry	Kind of Question	Study Design	Kind of Answer (Theory)	Other Names for Study Designs
1	What is this?	Factor-searching	Factor-isolating (naming)	Exploratory Formulative Descriptive Situational Control
2	What's happening here?	Relation-searching	Factor-relating (situation-depicting situation-describing)	Exploratory Descriptive
3	What will happen if…?	Association-testing	Situation-relating (predictive)	Correlational Survey design Non-experimental Natural experiment
		Causal hypothesis Testing		Experimental Explanatory Predictive
4	How can I make…happen?	Prescription-testing	Situation-producing (prescriptive)	

(Diers, 1979, p. 54)

This formulation took as threshold the nature of the research question itself. The conceptualisation allows investigators to choose among research designs as they fit the identified problem. Relating nursing practice problems to available study designs was intended to make legitimate *any* design that fit the problem.

The fourth level of inquiry is intended to devise a prescription to actually make something happen. The situations for which this design are particularly suited are when a "model of care" is a proposed solution to a perceived problem, usually in the delivery of services. Because the concept of "model of care" becomes important in a later section, a brief exegesis is required here.

Prescriptive testing studies

Dickoff and James (1968b) proposed that prescriptive theory would consist of (1) a goal statement; and (2) a "survey list" of six components that must be described and put in place for activity prescribed by the theory to commence. The six components were: (1) agency – who or what does the activity; (2) patiency – who or what receives the activity; (3) framework – the setting, context for the activity, writ large; (4) procedure – what the activity is; (5) dynamics – the "energy source" for the activity; and (6) terminus – the end point of the activity -- when, where and how progress toward the goal would be measured.

They proposed that the proper tests of this kind of theory were not statistical significance and hypothesis support but rather whether the "prescription" as specified by the survey list and the goal worked. They called the criteria for testing, *coherency* (did the prescription hang together); *palatability* (did we like the prescription and its results); *feasibility* (could the prescription be implemented) (Dickoff et al., 1968b)

The examples I used in 1979 were primary nursing and primary care (nurse practitioner practice and later nurse-midwifery) as *systems of care* (Diers, 1979 pp 199-223). To think of nursing practice as a system of care is to locate it within its framework, no matter how complicated that framework is, rather than isolating the practice from the rest of the nurse's or patient's reality as conventional research design does. Using the notion of *system of care* opened new possibilities for understanding nursing practices in the depth and richness in which they occur. Nursing practice as a system of care was an idea that took flight later (see Between Practice and Policy).

Discussion

The majority of nursing research today is still less centered on the practices of the profession than on describing the actual or potential recipients of care. This is no longer an effect of the presence of social science but reflects the realities both of funding and time/space for data collection. Studies of nursing practice are not easy. They require access to complicated clinical institutions and their ethics committees and a long time frame. The increasingly complex work of clinical practice and management does not leave much free intellectual space for practicing nurses to devise and conduct nursing research.[5] An exception may be evolving in clinical nursing management research, discussed in the following section.

More to the point, studies of nursing practice require close connection between the researcher and the practice. The movement of nursing into universities has its downside: educated nurses may feel as though they no longer need to get their hands dirty in nursing practice, since they are now dealing with high flying intellectual inventions. The best of clinical nursing research continues to value, respect and find new ways to include nursing practice.

The publications in this section leapt lightly over the pleas of others to let research define nursing. Rather, it was assumed that we knew what nursing was and now we needed to uncover nursing's knowledge and build on it to make the practice even more solid, grounded and effective. The effect is that nursing practice comes out of hiding, to be judged by the same standards by which other science is judged. The discomfort occasioned by visibility is traded as a consequence of respect and public valuation. The beginnings, at least, of a language with which to talk about nursing outside the discipline emerged. The conceptual connections between nursing practice questions and methodologic foundations for nursing practice research were established.

When later opportunities surfaced to bring practice and operational management together, the intellectual work described in this section provided the foundation. Extending practice-based research methods to studies not of

[5] Again, the "Clinical Chairs" in Australia are an exception. These Chairs are explicitly created to develop research that could affect practice, based in practice settings (mostly hospitals, but now including NSW Corrections Health).

direct patient care but of patient care operations was a natural progression of ideas. The extremely rapid progress in associating nursing to patient outcomes in aggregate operational studies that I have led both in the USA and in Australia, was the actualisation of the conceptual work years earlier.

BETWEEN PRACTICE AND CLINICAL/OPERATIONAL MANAGEMENT

The material discussed here is separated in time from that in the previous section by about 20 years. Continuity with the practice research agenda dictated the placement.

Hospitals all over the world changed profoundly when the payment strategies embedded in the patient classification system known as Diagnosis Related Groups (DRGs) was adopted beginning in the USA in 1984.[6] DRGs were created from existing hospital data (Fetter, Shin, Freeman, Averill, & Thompson, 1980), but it did not occur to many that casemix data could and should be mined for daily operational management. Casemix data include computer-readable patient demographic characteristics as well as the diseases patients have and the operative procedures and some treatments. Cost or other financial data are commonly available, in varying degrees of intelligibility and detail. Taken together, the clinical and financial data can track all patients to all resources and all resources to all patients. One of the most important resources to patient care is nursing.

DRGs and Nursing Acuity in Australia and USA

DRGs created a new information system as well as a new payment system. Institutions in most countries spent their time trying to "game" the payment system rather than to use data to advantage (Kleinke, 1998). Nursing's reaction to DRGs in the USA had been hapless outrage and knee-jerk resistance to this new instance of the "medical model" (Cole, 1982; Curtis, 1983). But in Australia, Debora Picone and her colleagues realised that if DRG-type information (and payment) systems were to be implemented, nursing had to seize the time. Picone visited Yale at the time we were building methods for attaching nursing resources as nursing time to DRGs **(Thompson & Diers, 1991)**. She took away an early approach to weighting DRGs by expert judgments of nursing care requirements and over the next several years, evolved a sophisticated quasi-Delphi approach to produce nursing cost weights for Australian DRGs (Picone, Ferguson, & Hathaway, 1993). The

[6] This work was also done at Yale University (the context is everything…) by an interdisciplinary team headed by Robert Fetter, an operations researcher, and John D. Thompson, a nurse and hospital administration expert. I worked with and taught with both of them for several precious years.

Australian nursing cost weights were the first such measurements adopted for payment in the world.

In the beginning, Australian nurses' reaction to DRGs was much the same as in the USA. The Australian Nursing Federation convened an invited meeting on DRGs the result of which was, among other things, an editorial: "Whoa!" **(Diers, 1991c)**. The editorial counselled nurses not to stick their heads in the sand as USA nurses had done, but to associate nursing's interests with casemix to our own advantage.

The Australian work continued under the umbrella of the Sydney Metropolitan Teaching Hospital Nursing Consortium, now affiliated with the New South Wales College of Nursing. The nursing weighting studies crossed the Pacific again and a new Yale study built on the Australian work. **(Diers, Bozzo, & RIMS / Nursing Acuity Project Group, 1997)**. I carried the Yale nursing work back to Australia for a project at Royal North Shore Hospital in Sydney in 2000.

In the USA, we mounted a new effort to convert the retrospective DRG-based nursing weights into concurrent "relative values" or "products" for nursing to allow nursing to enter the cost accounting systems of hospitals. Nursing produces levels of care (products) that depend upon patient conditions not well defined by DRGs. The American work was presented at a truncated Casemix Conference in Hobart, Tasmania, September 16, 2001 (Potter, Diers, Shelton, O'Brien, & Hayes, 2001). The Royal North Shore project is moving toward concurrent methods. I have been the frequent flyer, taking this project back and forth across the Pacific, using the Australian work to inform the USA work and vice versa.

"Nursing acuity" is the life raft to which nurses and nursing service administrators cling. Until nursing acuity can be measured in terms that financial administrators understand, "acuity" is only rhetoric. When nursing resources can be operationally defined in the same way other resources used to treat patient in hospitals are, nursing moves to the management and policy table. Picone and her colleagues achieved this in Australia with nursing cost weights for AN-DRGs, since cost weights were the payment principle. I moved that notion to the cost accounting methods used in USA hospitals as "relative values". When this work is published, I expect it will cut through

the nursing patient classification political rhetoric to create a clinically viable and operationally responsible way to measure nursing as resource.

Finding Nursing in Management Data

The DRG work led in one direction in the cross-Pacific collaboration and a different but parallel direction in the USA **(Diers, 1999)**.

In spite of being the most numerous professional group in hospitals, nursing is generally invisible in hospital information systems tilted toward financial efficiency analysis rather than analysis of clinical or operational performance (Werley & Lang, 1988). Hospital managers have little notion of the independent role of nursing in direct patient care, and even less of the operational role of the discipline in making patient care services happen to the right people, at the right time, in the right place, and with the right quality. The public knows even less. DRGs actually helped change that by creating ways to find nursing in administrative data systems **(Diers, 1991a)**.

By the mid 1980's when DRGs came in, there was a tiny but growing interest within nursing in the use of computers and software, a field that eventually became nursing informatics. That is different from *information management*, which is what I have come to call the art and science of using administrative data to produce information and knowledge. Nurses have used hospital data for financial management (Rutledge & Bennett, 1996) and there are scattered reports of small studies that used standard hospital information. I made the connection between the values that drive clinical nursing research, as discussed in the previous section and finding nursing as clinical and operational in standard hospital information systems. The issue is the same: valuing the practice of nursing, and then constructing methods to make that practice visibly credible using the standards of research or the more recently developed notions of data mining, administrative data analysis or information management.

At the invitation of Yale-New Haven Hospital, I created the nursing arm of a data mining capacity **(Diers & Bozzo, 1999; Diers, Weaver, Bozzo, Allegretto, & Pollack, 1998b).** The explicit purpose of this initiative was to use standard hospital data resources to assist nursing to make decisions and to solve problems, while bringing nursing into the information management interdisciplinary forums.

As I began to teach about using administrative data **(Pollack & Diers, 1996; Diers & Allegretto, 2000; Diers & Pelletier, 2001b)**, especially to experienced nurses, they wanted to dig into their own data. They knew the questions to ask**,** they'd just never had access to the data to answer them**.** When it became clear both to nurses and to those of us who were tapping the administrative data systems that we were united in the same interests, the progress went very quickly.

The resultant studies fill in the operational holes in large dataset health services research by relating the research to the local clinical or management question. As such, the contribution of the studies is more immediately at the local level where decisions can be made on the basis of data. Indeed, most of the studies in this section were done originally to help solve a local problem. Their publication revealed nursing in new ways.

Using only one hospital's data has the methodologic advantage of standardisation of data as well as access to local knowledge. Single hospital studies also avoid the "apples to Tuesdays" criticism of cross-institutional analyses that may not respect the differences between how hospitals are organised at the nursing unit level. Indeed, it is impossible to do studies at the nursing unit level using any standard data system in the USA (Needleman & Buerhaus, 2001). The Health Information Exchange (HIE) type of data warehouses, as in New South Wales, permit data acquisition to the clinical/operational management level. This will open enormous opportunities for nursing investigations that locate nursing resources and patient outcomes to the nursing unit. This work is as new in Australia as it is in the USA **(Diers & Pelletier, 2001a)**.

Two brief examples illustrate how the process of "finding nursing" works.

The nurse manager of an orthopaedic surgery unit knew that her unit was not manageable with the resources she had as staff. She had the reputation for being the worst nurse manager, constantly running overtime over budget, thought to be profligate. But she *knew* something was wrong with the way her unit was resourced. With her expert help, I designed and conducted a study that demonstrated that given the mix of cases on her unit, the budgeted and supplied resources were simply inadequate. When, by lucky

coincidence, the unit was reconfigured with fewer beds and a more restricted case mix, her budget and actual nursing resource consumption came into line, patient satisfaction increased, overtime decreased to under budget and she became the best nurse manager. **(Diers & Potter, 1997)**.

Another nurse manager, this time of the Surgical/Neurosurgical Intensive Care Unit (SICU/NICU) reported that her nurses were saying the work was "so much harder this year." The SICU had merged with the NICU the previous year under the same management. I designed a study to track patients across about 18 months before and after this reorganization **(Diers, Bozzo, Blatt, & Roussel, 1998a)**. There was essentially no difference in patient types, respirator-dependent patients, or spread of patients across DRGs. But length of stay did increase. The nurse manager understood these data: the perception of the work being harder came primarily from the NICU nurses, who were now being charged to care for SICU patients, a different population. The work felt harder. The solution was not to throw more money at the SICU/NICU for staff, but to help the staff understand the nature of their work.

Aiken and her colleagues have shown that "magnet hospitals" defined as "good places for nurses to work" (low nursing turnover rates) produced better patient outcomes than matched control hospitals (Aiken, Smith, & Lake, 1994; Scott, Sochalski, & Aiken, 1999). My student (who had the idea) and I (who helped her design the study) took that notion to the nursing unit level, which is actually where management decisions are made, to demonstrate that where nursing care is specialised, length of stay is shorter and mortality lower **(Czaplinski & Diers, 1998)**.

These studies *found* nursing in administrative data systems in ways that are immediately understandable and believable to practicing clinicians as well as managers and financial analysts. The rigor of study design is in the careful attention to the problem as presented, then matching data to problem. This is exactly the same mental process as matching the clinical question to available methods. With administrative datasets, this is easier than it is when designs must include primary data collection. Administrative data have their own problems, of course: coding reliability, the necessity to adjust for relative risk when making comparisons among patient groups, etc. The use of

administrative data for operational research --"evidence-based management" (Axelsson, 1998) -- is a field so new as to have no aggregations of studies[7].

Bringing visibility to nursing through these small studies meant *finding nursing* in available administrative data systems. That activity revealed to nursing and to others where nursing practice could be tracked. Because nursing practice could now be found in the same administrative data systems that are used for more general decision making, cost and quality management, nursing could become a player at the policy table. The experience of doing this kind of inquiry showed that when practicing nurses as managers articulated a perceived problem, not only was there truly the problem perceived, but their unstated hypotheses were nearly uniformly validated: the unmanageable nursing unit was actually unmanageable; the clinical work really was harder this year.

Discussion

I began with a belief in the value of nursing, and then built research from practice. The new tools of data mining and access to rich administrative data made the extension to clinical management easy. The effortless collaboration with expert practicing nurse managers made the work successful, and made it a model for a new field: nursing information management.

Enlightened hospitals are just beginning to realise that their long-term survival in any country will depend on actually *understanding* and then *managing* the institution's work. Not its "business"; rather its manufacturing capacity, or "production." Production theory explicitly lies under the inventions that became DRGs (Fetter, 1991). Production theory comes out of engineering – the same theories that now lie under Continuous Process Improvement, Total Quality Improvement and similar initiatives (Making Health Care Safer, 2001; "Hospitals get…" 2001). What these ideas all have in common is that clinical work needs to be understood, which means identified, found, labeled, traced, before it can be managed for either cost or quality.

[7] "Evidence Based Management" is about to take on new meaning. That is the name Dr. John Eisenberg, Director of the Agency for Healthcare Quality and Research (AHRQ) has assigned to that agency's initiatives with the Institute of Medicine on patient safety (Making Health Care Safer, 2001). Ahrqpubs@ahrq.gov

The data exist, in increasingly sophisticated and accessible computer-based information systems. The trick is to be able to claim access to the data for nursing for analysis of discipline-specific and then multi-disciplinary questions. The work summarised here is yet new, but the success is evident and the potential barely tapped. When we in nursing can understand our work as data and information, we can begin to *manage* nursing resources as time and energy and clinical expertise in the face of continuing worldwide nursing shortages. And more to the point, we can associate nursing to patient outcomes. That brings nursing to the boardrooms and policy tables.

BETWEEN PRACTICE AND POLICY

I have established that data and research lead to understanding of nursing's work. The contexts for practice, which include organisational decisions, government programmes, ethics, party political strategy are also "data." Often these contexts are hidden. I have often observed that nurses feel victimised by a random world. The world is not random; it may not be rational, but it is not random. There are real reasons why things happen. The publications discussed in this section were aimed at providing new explanations for nurses about policy perspectives, or at providing new understanding to the public, including policy makers, about nursing.

"Policy" is the acts of government or governmental agencies and the acts of non-elected entities including institutions and foundations and even the media that are "intended to direct or influence the actions, behaviors or decisions of others" (Longest, 1996, p 28). Included in the category of "policy" would be regulation, administrative law, judicial decisions, position papers (white and green papers), executive pronouncements, and funding/budgeting decisions. Policy explicitly includes the notion of value (Mooney, 2001).

Nurse Practitioners

When nursing in the USA moved into "expanded roles" especially the nurse practitioner role in the 1970's[8] I discovered new ways to "find nursing." In this period, "the expanded role" was the way nursing characterised the move of nurses prepared in postgraduate educational programs into primary care. Primary care meant first contact care during an episode of illness, and continuing care for common acute and chronic medical problems, generally in ambulatory care settings (Secretary's Committee, 1971). While nurses had been doing this kind of work invisibly in many countries for many years, the nurse practitioner role, as it came to be called (Ford, 1982) became a lightning rod for interprofessional politics between nursing and medicine. There were

[8] I was Dean of the Yale School of Nursing from 1972-1985, which explains the hiatus between the first and second sections of this thesis. During this period, I supported YSN to move swiftly to create some of the first educational programs in adult and pediatric primary care, supplementing a nurse-midwifery programme and a psychiatric nursing programme that had been in place since 1955 and 1949 respectively, among the first in any University in the USA.

also serious doubts within nursing about the wisdom of this movement (Rogers, 1975).

The methods I used to build the bridges from nursing to policy took the form of systematic literature review, historical and policy analysis, informed always by expert practitioners. By the mid 1970's there was a body of nursing research on nurse practitioner practice that could be molded into a selective literature review. While the education of nurse practitioners was expanding, the research on primary care practice was not in the mainstream of the nursing research literature. We put it there.

"Some conceptual and methodological issues in nurse practitioner research" **(Diers & Molde, 1979)** was published in the journal that was thought to have the most influence in nursing research circles. We deliberately used research concepts to discuss some of the policy and political issues that were then festering and threatening to stall the forward development of advanced nursing practice.

> The overwhelming majority of research on nurse practitioner practice has not dealt with a conceptual understanding of the *practice*; rather, the independent variable has been conceived of as the *practitioner* (Diers & Molde, 1979, p 74).

The political target of this analysis was the perception, both within and outside of nursing, that nurse practitioners were "mini-doctors" or generic "mid-level health professionals." We used the argument that constructing the independent variable for nurse practitioner studies with this sort of definition led to peculiar findings. For example, comparing nurse practitioner practices in an inner city clinic with physician practices in an upper class office practice showed NP practice to be equivalent. Given the likelihood that the inner city patients were needier, the more appropriate conclusion is that the NP practice was superior.

We argued for an approach to defining primary care practice that would include both technical care and the "art of care", and both process and outcomes.

> It may be a mistake to take as conceptual definition of nurse practitioner care simply the fact that it is done by people called nurse practitioners. Rather, it appears that the independent

> variable is a *system of care*. The conditions under which nurse practitioners and physicians function… the kinds of patient problems identified, the provider process, the motivation and the rewards for the work may all differ….Studies that compare nurse practitioner practice with other practice forms require a theoretical definition of the practice that transcends, but does not ignore the discipline of the practitioner (Diers & Molde, 1979, p. 75).

The notion of "system of care" came directly from my elaboration of prescription-testing study designs **(Diers, 1979, chapter 8)**. To treat nurse practitioner practice or nurse-midwifery as a system of care makes possible the use of the policy arena as a conscious variable, not simply a background characteristic ignored by the research design. Knowing the political and policy context for the work is as important to understanding nurse practitioner practice as is understanding the processes and outcomes of care.

We made similar kinds of arguments for re-defining the dependent variable so that outcomes particular to nurse practitioner practice would have legitimacy as research targets:

> The art-of-care … may include such potentially measurable variables as comprehensiveness, completeness, and accuracy as well as sensitivity or precision – the extent to which care is tailored to each patient's particular needs and capacities (supposedly the essence of clinical judgment) (Diers & Molde, 1979, p. 75).

The early rhetoric about nurse practitioners would have had them caring for the "worried well and the walking wounded".[9] The extant studies had been either descriptions of nurse practitioner practice or comparisons with physician practice. We said that comparing NP practice to physician practice was an overly narrow conception of the NP role and function, which led to a critique of the Burlington studies in Canada (Spitzer, Sackett, & Sibley, 1974) which had been so important in breaking ground for nurse practitioner practice and education. The issues with the Burlington studies involved how patients were randomly assigned to MDs or NPs (they weren't; NPs got all the "new"

[9] This rhetoric actually came from the physician assistant movement, which also came out of Yale (Sadler, Sadler, & Bliss, 1975). Physician assistants are exactly that, not independent practitioners. There is no equivalent to the PA movement internationally.

patients to the practices) and what the standards for outcome measurements were. The standards for some measures were set so low as to be clinically questionable and the standards for others were set so high as to be unachievable (Diers & Molde, 1979). We ended with the observation that given the way comparison groups were formed, the fact that nurse practitioner care was equivalent to physician care was a conservative conclusion.

A subsequent publication **(Molde & Diers, 1985)** extended the methodological issues to include questions of linking process to outcome, measures of complexity of care, use of existing data, and the effect of nurse practitioner education and experience on interpretation of findings. This second article concluded with a research agenda advocating studies designed to improve rather than evaluate practice. We proposed moving away from NP/MD comparisons, and advocated studies designed with a policy framework in mind. We also proposed the "social drift" hypothesis: patients who are complicated drift through medical primary care eventually to end in the NP's caseload. We tested this hypothesis and found support for it **(Diers, Hamman, & Molde, 1986)**.

Taking a methodological perspective rather than an advocacy stance made available the content of these pieces to policy forums and these publications were entered in the policy publications of the times in the USA and in Australia (Adrian, 1996; Ford, 1982).

Nurse-Midwifery and Nurse Anaesthesia

I wrote about nurse-midwifery explicitly to try to make nurse-midwifery available to the mainstream advanced nursing practice audience in the USA as a model. Nurse-midwives do not necessarily desire this in the USA, Australia or New Zealand. But I believe that the struggles and successes of nurse-midwifery should be known in the nursing discipline and could provide some needed guidance to newer advanced practice specialisation options for nurses.

We (**Diers & Burst, 1983)** showed how nurse-midwifery's early investment in collecting data about nurse-midwifery practice and outcomes paid off powerfully in a policy context. This argument was aimed directly at nurses in advanced practice who were by this time finding themselves invisible in institutional or insurance information systems.

> Part of the explanation for nurse-midwives' success is the quality of the data from which the specialty has been able to argue for changes in systems of care, reimbursement and other policy agendas. Nurse-midwives have since the beginning been urged to keep statistics…The purpose of keeping statistics…was primarily for program …evaluation. It turns out that the statistics were the data from which the nurse-midwifery effectiveness literature has been written (Diers & Burst, 1983, p. 69).

By this time, I had already experimented with using the notion of "prescriptive theory" as a way to conceptualise the complexity of nurse-midwifery as a system of care **(Diers, 1980)**. I drew together the published literature and some powerful but unpublished studies to argue that nurse-midwifery made a good case example for what was then called "healthcare reform".

I became fascinated by the parallels between nurse-midwifery and nurse anaesthesia in the US through policy consultations with both groups. The explicit purpose of the policy/historical/political analysis of the two sub-specialties in nursing was to bring the information into the nursing mainstream. The parallel histories of nurse-midwifery and nurse anaesthesia, particularly in their relationship both to medicine and to nursing suggested historiography as method **(Diers, 1991b)**.

The nursing specialties of *nurse*-midwifery and nurse anaesthesia have a very different evolutionary history in the USA than in other countries. Nurse-midwives (CNM – Certified Nurse Midwife) and nurse anaesthetists (CRNA – Certified Registered Nurse Anaesthetist) both require basic nursing preparation; both are postgraduate nursing educational programs, nearly uniformly in master's programmes. There is a midwifery movement that is not based in the profession of nursing in the USA that is gaining strength and that has a closer connection to midwifery in Australia and other countries than nurse-midwifery does. There is no non-physician profession of anaesthesia delivery outside the USA.

Nurse-midwifery and nurse anaesthesia share three themes: are we nurses or not? Complement or substitute [to physician practice]? And, money

and power (cost effectiveness, reimbursement, regulatory issues including malpractice insurance) (Diers, 1991b). I matrixed those themes to additional analysis that showed how the historical development of these two specialties was shaped by the nature of their work, and thus how the respective disciplines worked their policy and political agendas. Nurse-midwifery's natural constituency is women and babies; nurse anaesthesia does not have a natural constituency in patients served. Nurse-midwifery has built its considerable prestige and power from consumer alliances and political manoeuvre. Nurse anaesthesia has built its equally powerful positions from legal and regulatory minuets, and policy positions based on equity of access to anaesthesia services and quality of care (Diers, 1991b).

The question of whether nurse-midwives and nurse anaesthetists are nurses or not raised the definitional demon. In this instance, I established that the relationship (or lack thereof) with the American Nurses Association (ANA) was definitive, for right or wrong, in the evolution of the specialties. In both cases, the ANA had other agendas and refused to support these nascent specialties. Both groups moved away from the professional organisation and created their own now quite powerful bodies.

American nurse-midwifery and nurse anaesthesia were then very far ahead of other advanced nursing practice specialties in the USA in regulating themselves, in negotiating payment for services from public and private sources and in standardising their practices and education. They were also very much more politically and policy-sophisticated than the emerging nursing specialty groups.

Nursing Research and Policy

The policy-related work outlined above as well as my continuing interest and experience in participating in policy deliberations and teaching nursing and policy evolved to complete the circle from research to policy and back.

The policy-making process is generally outlined as getting on the agenda or agenda setting; policy formulation; policy implementation; policy evaluation and modification. If nurses wish to move beyond our parochial interests (Cohen et al., 1996), it will be necessary to know what the policy process is, as well as how to use the tools of research to influence policy.

Since there is yet little literature or experience of the use of nursing research in influencing policy, I used research in other disciplines, particularly medicine to produce a policy-analytic chapter on this topic[10] **(Diers, 2002 in press)**.

As in the previous policy pieces referenced in this section, a theme has been to heighten awareness of the non-randomness of the world by revealing the political forces behind the scenes. I did this through narratives that illustrate different facets of the process, a technique now gaining some visibility as "anecdote matters" (Charon, 2001; McDonaugh, 2001; Sharf, 2001).

Until the policy agenda is understood, it is difficult to associate one's own disciplinary interest or research to it (Kingdon, 1995). When it is possible to associate nursing's interest to existing policy thrusts, a win-win situation can be constructed.

Discussion

The publications in this section document my contributions to the development of advanced practice nursing in a policy context. I used research/data as the hook upon which to hang policy with practice. That hook conjures up the earlier work in research methods and data mining.

The nursing discipline has not, however, warmly embraced nurse-midwifery nor nurse anaesthesia for the pioneers they are, nor has the discipline yet found ways to integrate advanced practice or nurse practitioners into the mainstream. Indeed, at least in the USA, there seems not to be a "main" stream anymore; instead, there are many parallel, connecting waterways as the discipline becomes more and more complicated. My writing (and teaching) has been intended to help us find our disciplinary core and keep us together before an increasingly interested public.

[10] A singularly important exception to the general paucity of policy-related research in nursing is the exquisite use of data collection in the NSW nurse practitioner trials to influence the passage of enabling legislation, the first in Australia. (de la Rue, 1997)

BETWEEN PRACTICE AND THE PUBLIC

My appointment as Dean at age 34 attracted a good deal of attention when I was appointed and it was important that the School of Nursing seize the moment. One person whose attention was caught was the Editor of the *Yale Alumni Magazine,* William Zinsser, whose work I had admired when he had been a columnist for *Life* magazine. He wanted to write a feature on this unusual appointment. Not entirely trusting a lay person to get the story of nursing right, I asked if I could write an essay which he could then tinker with. He changed only one word and he became a fan of nursing. This publication reaches 90,000 living alumni, many of whom are in positions important to discussion of nursing issues.

The article, "It's a good time for nursing" was written to re-awaken this public to modern nursing in all its complexity. Zinsser let me use a provocative and lyrical writing style, the style itself carefully thought through to appeal to this audience.

The success of the first article **(Diers, 1972)**. in making nursing appreciated (even in recruiting graduate students who had been referred to it by some Yale alumnus for whom they were caring) was remarkable. The local effect was equally powerful. "I didn't know a nurse could write so well," was a common comment and I found the intricate political negotiations in which I was then involved became easier.

Ten years later, another opportunity surfaced in the same venue to explain nurse practitioners and nurse-midwives as political battles began to attract public attention. The Yale School of Nursing was out there on the barricades and a new Editor of the same journal smelled a story. This time he asked me to write it. I used the same literary style, but this time the issues and the climate were different **(Diers, 1982)**. This time I negotiated to add interviews with some of our faculty and alumnae including the carefully placed male Yale College graduate.[11] Again, publication in the *Yale Alumni*

[11] Yale College is Yale University's undergraduate school, where the University began. It is the physical and metaphorical heart of the University. Any kind of connection one can make with the College is to be sought, all the time.

Magazine conferred legitimacy to nurse practitioner and nurse-midwifery practice that changed the tone and the volume of the opposition rhetoric.

In the early days of the nurse practitioner movement, I made a presentation to a conference held by the Robert Wood Johnson Foundation. While that Foundation had supported nurse practitioner developments, the executives were never enthusiastic. In the presentation, I used a number of metaphors to try to speak to the unbelievers. Claire Fagin, then Dean of the School of Nursing at the University of Pennsylvania, was in attendance and we decided to put together an essay that would be deliberately aimed at public readers.

After several failed attempts to place it as an "op ed" in newspapers with national readership, we sent it to the *New England Journal of Medicine* where it was published **(Fagin & Diers, 1983)** with simultaneous publication in the *American Journal of Nursing* (1983). The essay has been reprinted many times in state medical and nursing journals and is still resurrected when a newspaper needs a colourful nursing essay. The *New York Times* exerpted it again in 2000 (Becoming a nurse, 2000).

Discussion

The contexts for practice are as important as the practice itself or the research. Both policy and public perception are contexts for nursing that need to be appreciated and understood, perhaps even manipulated, for the discipline's forward progress.

Nursing's research or policy advocacy are not finished until they reach public forums. We can speak within the discipline, and even talk with professional colleagues profitably but until we can engage the public our issues, we are wasting our breath. I had hoped that some of my writing would begin to influence the worst of the women's movement rhetoric that completely discounts nursing's impact on society because we are women in a women's profession. Regrettably, I find little evidence of this effect.

Where the publications in this section mattered was in the business and professional communities where some attitudes toward nursing changed. Nursing is fiendishly difficult to explain to those outside the field, which makes writing for the public such an

interesting challenge. Our sensibilities, our explicit valuing of individuality and difference, our dedication to caring and our sense of community are gifts the public should know and appreciate.

CONCLUSION

The publications reviewed represent the work of over 40 years. During that time, much has changed in nursing. The work detailed here has was crafted to influence those changes by revealing nursing and placing it centre-stage; centre stage in terms of bodies of research and operational knowledge shared by many disciplines. Making the association of nursing to existing intellectual playing fields was intended to bring nursing into visibility in language and story that could be understood and valued by others. More to the point, I have aimed specifically to provide nurses with ways to honour our gifts.

Several of the themes expressed here were not popular in their own time. Doing serious, scientifically credible *clinical* nursing research was not applauded in the 1960's and early 1970's. Nursing in the USA was obsessed then with creating credible curricula and lofty conceptual models to make the discipline deserve the university settings in which we found ourselves.

Later, the focus on distilling the clinical and operational ffacets of nursing from administrative data sets flew in the face of nursing's professional hostility to both medical diagnostic language and data derived from it as minimum data sets and Diagnosis Related Groups. And surely the efforts to define and support nurse practitioner practice, nurse-midwifery and nurse anesthesia when organised medicine disdained and opposed these roles won few prizes in nursing nor in medical politics.

It was neither foolhardiness nor bravery that produced the publications here. It was a conscious seizing of opportunities that presented themselves to develop and exploit location, position, timing and a growing talent for verbal expression. Fuelled always by passionate understanding of what it is *to nurse* and to live the clinical, academic and management life of a nurse.

When I first entered nursing, there was debate about whether nursing was an art or a science. If it was an art, then it would be unavailable for scientific study. If it was a science, where was the evidence? In helping the discipline develop its scientific base, I was always aware that there was some

other tint or shade of meaning. Not unscientific, but not well described by the canons of logical positivism (nor by the later canons of postmodernism).

The union between art and science (and science and policy) is actually *craft*:

> Crafts, it is thought, are minor art forms done by nimble-fingered natives or by women at home with time on their hands and a basket of yarn at their feet…
>
> Craft has the meaning of strength as well as skill, and surely the muscular leap of insight the scholar, the clinician, the lawyer feel (and "feel" is the operative word) when she or he suddenly *understands,* is a show of strength. In crafts, the esthetic is connected with the functional. The work of the mind in craft is holding a mental image of the finished product, then selecting material, tool and technique to create. Such selection is very complicated and requires much more than mere practice or skill, for it takes knowing the structure – the theory if you will – of the wood or metal or warp.
>
> Craft requires more than understanding of the material, just as scientists and scholars and clinicians and performers cannot settle for simply knowing and keeping that knowledge confined in the head. Craft is what the delicate work of science and scholarship is, when the struggle for clarity and precision is going on. Craft implies beauty as value. The search for beauty is what motivates the clinician as much as it moves the performer; the scholar and scientist as much as the artist. Surely cure is more attractive than disease, and belief more beautiful than confusion; logic is prettier than irrationality and order more decorative than chaos. Nature can produce art but only human beings can do craft.
>
> "Craft" unlike "scholarship" or "science," implies visibility, a product of the hands. The work of hands is

> nearly always less valued than the work of the mind, but visible work is complicated because it is judged by others…
>
> Scholarship is visible when it is published or taught and it requires exactly the same discipline of form and style, substance and clarity as service or professional practice. The craft of the lawyer, the minister, the physician brings together the parts of the discipline called art or science in the service of others, so the notion of craft as service is yet another way in which … fields have a common base. In fact, all of the [academic] fields are not only crafts, but also have in them all, art and science and scholarship as well as service, and all share a common purpose. And that purpose is, precisely and painfully, to change the world **(Diers, 1983)**.

Annie W. Goodrich, first Dean of the Yale School of Nursing, provided me with the proper end to that presentation. It is also the proper end to this thesis:

> To the nurse, working in the different levels of the social structure, in touch with the fundamentals of human experience, is given a unique opportunity to relate the adventure of thought to the adventure of action; -- this to the end that a new social order to which we are committed by our forefathers may be realized (Goodrich, 1933, p. 14).

References

Abdellah, F. G., & Levine, E. (1965). *Better Patient Care through Nursing Research*. New York: Macmillan.

Adrian, A. (1996, September). Competition or collaboration: Reflections on nurse practitioners, professional 'bunkers', consumers and the challenge of making the health care jig saw fit together. 57th Annual Meeting, Victorian Nurse Executives Association Inc.

Aiken, L.H. (Ed) (1980) *Health Policy and Nursing Practice*. New York: McGraw-Hill

Aiken, L., Smith, H., & Lake, E. (1994). Lower Medicare mortality among a set of hospitals known for good nursing care. *Medical Care, 32*(5), 771-787.

Axelsson, R. (1998). Towards an evidence based health care management. *International Journal of Health Planning and Management, 13*(4), 307-317

Becoming a nurse: Two views 1900 and 2000. (2000, November 7). *New York Times,* p. F7.

Benner, P. (1983). Uncovering the knowledge embedded in clinical practice. *Image - Journal of Nursing Scholarship, 15*(2), 36-41.

Benner, P. (1984). *From Novice to Expert*. Menlo Park, CA.: Addison-Wesley

Brown, S. J. (1999). *Knowledge for Health Care Practice - A guide to using research evidence*. Philadelphia: Saunders.

Charon, R. (2001) Narrative medicine - A model for empathy, reflection, profession and trust. *JAMA*,*286*(15), 1897-1902

Cohen, S. S., Mason, D. J., Kovner, C., Leavitt, J. K., Pulcini, J., & Sochalski, J. (1996). Stages of nursing's political development: Where we've been and where we ought to go. *Nursing Outlook, 44*(12), 259-266.

Cole, E. (1982, November 22). Testimony before the House Subcommittee on Health and Environment of the Committee on Energy and Commerce. *US Government Printing Office, Serial 97-183*.

Curtis, B. (1983, February 14). Testimony before the Subcommittee on Health of the House Ways and Means Committee. *US Government Printing Office, Serial 98-6*.

Czaplinski, C., & Diers, D. (1998). The effect of staff nurse specialization on length of stay and mortality. *Medical Care, 36*(12), 1626-1638.

de la Rue, B. (1997). Nurse practitioner developments in Australia. *Nurse Practitioner, 22*(4), 252-253.

Dickoff, W., & James, P. (1968a). A theory of theories. *Nursing Research, 17*(3), 197-203.

Dickoff, W., & James, P. (1968b). Researching research's role in theory development. *Nursing Research, 17*(3), 204-206.

Dickoff, W., James, P., & Weidenbach, E. (1968a). Theory in a practice discipline: Practice oriented theory (Part I). *Nursing Research, 17*(5), 415-435.

Dickoff, W., James, P., & Weidenbach, E. (1968b). Theory in a practice discipline: practice oriented research (Part II). *Nursing Research, 17*(6), 545-554.

Diers, D. (1970a). Faculty research development at Yale. *Nursing Research, 19*(1), 64-71.

Diers, D. (1970b). This I believe...about nursing research. *Nursing Outlook, 18*(11), 50-54.

Diers, D. (1971). Finding clinical problems for study. *Journal of Nursing Administration, 1*(6), 15-18.

Diers, D. (1972, December). It's a good time for nursing. *Yale Alumni Magazine, 36,* 8-13.

Diers, D. (1979). *Research in nursing practice*. Philadelphia: Lippincott.

Diers, D. (1980). Nurse-midwifery as a system of care: Provider process and patient outcome. In L. Aiken (Ed.), *Health Policy and Nursing Practice* (pp. 73-89). New York: McGraw-Hill.

Diers, D. (1982). Between science and humanity: Nursing reclaims its role. *Yale Alumni Magazine, 45*(5), 8-12.

Diers, D. (1983, September 19-26). The adventure of thought and the adventure of action. *Yale Weekly Bulletin and Calendar,* pp. 3-4.

Diers, D. (1991a). DRGs and the measurement of nursing. In L. H. Aiken & C. M. Fagin (Eds.), *Nursing in the '90's* (pp. 149-167). Philadelphia: Lippincott.

Diers, D. (1991b). Nurse-midwives and nurse anesthetists: The cutting edge in specialist practice. In L. H. Aiken & C. M. Fagin (Eds.), *Nursing in the '90's* (pp. 171-193). Philadelphia: Lippincott.

Diers, D. (1991c). Whoa! *Australian Nurses Journal, 20*(10), 8-9.

Diers, D. (1999). Casemix and nursing. *Australian Health Review, 22*(2), 56-68.

Diers, D. (2001). What is nursing? In J. McCloskey Dochterman & H.K. Grace (Eds.), *Current Issues in Nursing* (6th ed., pp. 5-13). St Louis: Mosby

Diers, D. (2002 in press). Research as policy/political tool. In D. J. Mason, J. K. Leavitt, & M. W. Chaffee (Eds.), *Policy and Politics in Nursing and Health Care* (4th ed.). New York: Harcourt Health Sciences.

Diers, D., & Allegretto, S. (2000). Teaching Information Management. *Journal of Health Administration Education, 18*(4), 429-439.

Diers, D., Bozzo, J., Blatt, L., & Roussel, M. (1998). Understanding nursing resources in intensive care: A case study. *American Journal of Critical Care, 7*(2), 143-148.

Diers, D., & Bozzo, J. (1999). Using administrative data for practice and management. *Nursing Economic$, 17*(4), 233-237.

Diers, D., Bozzo, J., & RIMS / Nursing Acuity Project Group. (1997). Nursing resource definition in DRGs. *Nursing Economics, 15*(4), 124-130.

Diers, D., & Burst, H. V. (1983). The effectiveness of policy related research: Nurse-midwifery as case study. *Image: The Journal of Nursing Scholarship, 15*(3), 68-74.

Diers, D., & Evans, D. L. (1980). Excellence in nursing. *Image, 12*(2), 27-38.

Diers, D., Hamman, A., & Molde, S. (1986). Complexity of ambulatory care: Nurse practitioner and physician caseloads. *Nursing Research, 35*(5), 310-313.

Diers, D., & Molde, S. (1979). Some conceptual and methodological issues in nurse practitioner research. *Research in Nursing and Health, 2*(2), 73-84.

Diers, D., & Pelletier, D. (2001a). From I.T. to information management with casemix data. *Australian Health Review, 24*(1), 62-67.

Diers, D., & Pelletier, D. (2001b). Seeding information management capacity to support operational management in hospitals. *Australian Health Review,* 24(2), 74-81

Diers, D., & Potter, J. (1997). Understanding the unmanageable nursing unit with casemix data. *Journal of Nursing Administration, 27*(11), 27-32.

Dumas, R. G., & Leonard, R. C. (1963). The effect of nursing on the incidence of post-operative vomiting. *Nursing Research, 12*(1), 12-15.

Ellison, M., Diers, D., & Leonard, R. C. (1965). The use of behavioral science in nursing: Further comment. *Nursing Research, 14*(1), 71-72.

Fagin, C., & Diers, D. (1983). Nursing as metaphor. *New England Journal of Medicine, 309*(2), 116-117; American Journal of Nursing, 83(9), 894

Falck, H. S. (1968). Letter to the Editor. *Transaction, 5*(6), 63.

Fetter, R. B. (1991). Diagnosis Related Groups: Understanding hospital performance. *Interfaces, 21*, 6-26.

Fetter, R. B., Shin, Y., Freeman, J. L., Averill, R. F., & Thompson, J. D. (1980). Case mix definition by diagnosis related groups. *Medical Care, 18*(2 (Supplement)), 1-53.

Ford, L. C. (1982). Nurse Practitioners: History of a new idea and predictions for the future. In L. H. Aiken (Ed.), *Nursing in the 1980's: Crises, opportunities, challenges* (pp. 231-247). Philadelphia: Lippincott.

Glaser, B. G., & Strauss, A. L. (1965). *Awareness of Dying*. Chicago: Aldine.

Goodrich, A. W. (1933). *The Social and Ethical Significance of Nursing*. New York: Macmillan

Gortner, S. R., & Nahm, H. (1977). Overview of Nursing Research in the United States. *Nursing Research, 26*(1), 10-33.

Henderson, V. (1956a). An overview of nursing research. *Nursing Research, 6*, 61-71.

Henderson, V. (1956b). Research in nursing practice: when? *Nursing Research, 4*, 99.

Hospitals get safety improvement task list (2001). *Journal of the American Medical Association, 286*(6), 661-662.

Johnson, D. (1968). Theory in nursing: borrowed or unique? *Nursing Research, 17*(3), 206-209.

Kingdon, J. W. (1995). *Agendas, Alternatives, and Public Policies*. New York: Longman.

Kleinke, J. D. (1998). Release 0.0: Clinical information technology in the real world. *Health Affairs, 17*(6), 23-38.

Leonard, R. C. (1957). Developing research in a practice-oriented discipline. *American Journal of Nursing, 67*(7), 1472-1475.

Longest, B. B., Jr. (1996). *Seeking Strategic Advantage Through Health Policy Analysis*. Chicago:Health Administration Press

McDonaugh, J. E. (2001). Using and misusing anecdote in policy making. *Health Affairs, 20*(1), 207-212.

Molde, S., & Diers, D. (1985). Nurse practitioner research: Selected literature review and research agenda. *Nursing Research, 34*(6), 362-367.

Mooney, C. Z. (2001). *The public clash of private values; The politics of morality policy*. New York: Chatham House.

Needleman, J., & Buerhaus, P. I. (2001, February 28). Nurse staffing and patient outcomes in hospitals, *Final report, US Department of Health and Human Services, Health Resources and Services Administration*. Harvard School of Public Health, Boston, MA USA.

Nicoll, L. H. (1997). *Perspectives on nursing theory*. (3rd ed.). Philadelphia: Lippincott.

Extending the scope of nursing practice (1971). . Washington DC: US Government Printing Office (HSM 73-2037).

Picone, D., Ferguson, L., & Hathaway, V. (1993, September). *NSW Nursing Costing Study*. Sydney, Australia: Sydney Metropolitan Teaching Hospitals Nursing Consortium.

Pollack, C. D., & Diers, D. (1996). Data as textbook. *Computers in Nursing, 14*(1), 31-36.

Potter, J., Diers, D., Shelton, C., O'Brien, W., & Hayes, M. (2001). *Building a nursing acuity system for nursing management.* Paper presented at the 13th Casemix Conference, Hobart, Tasmania, Australia.

Making Health Care Safer: A critical analysis of patient safety. (2001, August) ahrqpubs@ahrq.gov.

Rogers, M. E. (1975). Euphemisms in nursing's future. *Image, 7*(2), 3-9.

Rutledge, V. R., & Bennett, C. A. (1996). Cost containment initiatives: Analysis of clinical resource use. In J. V. Jickey & R. M. Ouimette (Eds.), *Advanced practice Nursing* Philadelphia: Lippincott-Raven, pp. 225-252).

Sackett, D. L., Rosenberg, W. M. D., Gray, J., Haynes, R. B., & Richardson, W. S. (1996). Evidence based medicine: What it is and what it isn't. *British Medical Journal, 312*(312), 71-2.

Sackett, D. L., Straus, S. E., Richardson, W. S., Rosenberg, W., & Haynes, R. B. (2000). *Evidence Based Medicine*. New York: Churchill Livingstone.

Sadler, A. M., Sadler, B. L., & Bliss, A. A. (1975). *The Physician's Assistant Today and Tomorrow: Issues confronting new health practitioners*. Cambridge, MA:Ballinger)

Scott, J. G., Sochalski, J., & Aiken, L. (1999). Review of magnet hospital research: Findings and implications for professional nursing practice. *Journal of Nursing Administration, 29*(1), 9-19.

Sharf, B. F. (2001). Out of the closet and into the legislature: Breast cancer stories. *Health Affairs, 20*(1), 213-218.

Sheldon, E. B. (1963). The use of behavioral sciences in nursing: An opinion. *Nursing Research, 12*(3), 150-152.

Simmons, L., & Henderson, V. (1964). *Nursing Research*. New York: Appleton-Century-Crofts.

Spitzer, W.O., Sackett, D.L., sibley, J.C., Roberts, R.S., Gent, M., Kergin, D.J., Hackett, B.C. & Olnyich, A. (1974) The Burlington randomized trial of the nurse practitioner. *New England Journal of Medicine*, *290*, 251-256

Symposium: Research - How will nursing define it? (1967). *Nursing Research, 16*(2), 1008-129

Thompson, J. D., & Diers, D. (1991). Nursing resources. In R. B. Fetter (Ed.), *DRGs-Design, development, and applications* (pp. 121-183). Ann Arbor: Health Administration Press.

Wald, F. S., & Leonard, R. C. (1964). Toward development of nursing practice theory. *Nursing Research, 13(3)*, 309-313.

Werley, H. H., & Lang, N. M. E. (1988). *Identification of the Nursing Minimum Data Set*. New York: Springer.