DOCUMENT RESUME

ED 140 687 HE 008 944

AUTHOR Phillips, Thomas P., Ed.
TITLE The Doctorally Prepared Nurse. Report of Two Conferences on the Demand for and Education of Nurses with Doctoral Degrees.
INSTITUTION Health Resources Administration (DHEW/PHS), Bethesda, Md. Bureau of Health Manpower.
REPORT NO DHEW-HRA-76-18
PUB DATE Mar 76
NOTE 113p.
AVAILABLE FROM Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock No. C17-041-00115-7; $1.80)

EDRS PRICE MF-$0.83 HC-$6.01 Plus Postage.
DESCRIPTORS *Conference Reports; *Degree Requirements; Doctoral Degrees; *Doctoral Programs; *Educational Objectives; Educational Planning; Geographic Distribution; Government Role; *Graduate Study; Health Occupations; Higher Education; Hospital Personnel; Manpower Needs; *Nurses; Nursing; Professional Occupations; Scientific Manpower; Trend Analysis

ABSTRACT

The proceedings of two conferences held by the Division of Nursing that have focused on doctoral preparation of nurses are presented in this publication. The first, the "conference on Issues in Doctoral Education for Nurses," held in Bethesda, Maryland, on February 22, 1974, called together project directors and deans of schools of nursing that had ongoing Nurse-Scientist Programs at a time when future support for these programs was under question and careful planning for advanced education was crucial. The second, "Conference on Doctoral Manpower in Nursing," was held in Silver Spring, Maryland, on June 19-21, 1974. It addressed the issue of the requirements for doctorally prepared nurses needed in the nation, and it called on the experience and knowledge of a group of nurses familiar with academic, service, and other related settings where highly knowledgeable nurses are needed. (LBH)

THE DOCTORATE

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE • HEALTH RESOURCES ADMINISTRATION

THE DOCTORALLY PREPARED NURSE

Report of Two Conferences on the Demand for and Education of Nurses with Doctoral Degrees

March 1976

HEALTH MANPOWER REFERENCES

DHEW Publication No. (HRA) 76-18

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE ■ HEALTH RESOURCES ADMINISTRATION
BUREAU OF HEALTH MANPOWER ■ DIVISION OF NURSING
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THOMAS P. PHILLIPS, PH.D.
Scientific Editor

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Washington, D.C. 20402 - Price $1.80
Stock No. 017-041-00115-7

FOREWORD

This publication presents the proceedings of two conferences held by the Division of Nursing which have focused on doctoral preparation of nurses. The earlier conference called together project directors and deans of schools of nursing which had ongoing Nurse-Scientist Programs at a time when future support for these programs was under question and careful planning for advanced education was crucial.

The second conference, which addressed the issue of the requirements for doctorally prepared nurses needed in the Nation, called on the experience and knowledge of a group of nurses familiar with academic, service, and other related settings where highly knowledgeable nurses are needed.

The conferences are the latest among a number of efforts designed to assess needs and options for advanced preparation. From the Surgeon General's Consultant Group which, in 1961, highlighted the need for nurses with graduate preparation in general, to the 1971 Future Direction of Doctoral Education Conference, which addressed the qualitative aspects of the curricula, the Division has been involved in the issue of graduate preparation.

A majority of the nurses currently prepared at this level have received financial assistance for some part of their education through the Nurse-Scientist Program or from the Special Nurse Research Fellowship Program of the Division. Further involvement of the Division of Nursing in, and concern for graduate education is assured as a result of the Advanced Training provision of the Nurse Training Act of 1975.

It is hoped that this publication will stimulate those concerned with higher education for nurses, and that it will encourage continued dialogue and refinement of those issues that must be resolved if nursing education is to move ahead decisively toward the attainment of its full capabilities.

We wish to thank Dr. Helen Grace for her assistance in the editing of the transcript materials of the two conferences.

Jessie M. Scott

JESSIE M. SCOTT
Assistant Surgeon General
Director
Division of Nursing

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February 22, 1974
Bethesda, Maryland

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INTRODUCTION

The purposes of the Conference on Issues in Doctoral Education were (1) to identify current developments in doctoral education that have significance for Federal programs and policies, and (2) to review the experiences of the Training Grant settings with the Nurse-Scientist Graduate Training Programs in the first year that the training programs had not accepted new applicants.

An assessment of current developments in doctoral education for nurses at the national level was essential, since the two national training programs responsible for supporting a large majority of nurses for doctoral study, the Special Nurse Fellowship Program and the Nurse-Scientist Graduate Training Program, had not accepted new nurse applicants for a year. The uncertainty of the role of Federal support in the doctoral education of nurses, coupled with what appeared to be a lack of university commitment to programs for such education, created an untenable situation. Further, the moratorium on the acceptance of new nurse applicants occurred when the special Nurse Research Fellowship Program and the Nurse-Scientist Graduate Training Program were in a period characterized by increased demand for support from nurse applicants with outstanding characteristics. If the moritorium on the acceptance of new nurse applicants continued to prevail, the supply of doctorally prepared nurses would be greatly jeopardized —this, at a time when the profession sorely needs these nurses to provide leadership to the profession, as well as to develop and verify the body of knowledge upon which nursing rests.

Federal nurse administrators had major concerns about all aspects of doctoral nursing manpower. In particular, from the Division of Nursing's point of view, the nursing profession needed to determine: number of doctorally prepared nurses currently available; those needed for the future; geographic distribution; and the nature of their preparation in relation to the demand for these nurses in nursing research, clinical nursing, nursing administration, and other related disciplines.

A review of the experiences of the administrators of the Nurse-Scientist Graduate Training programs during the year no new applicants were accepted, it was assumed, would provide a geographical perspective, since the nine grants are located in different parts of the country, and also give data about the number and kind of inquiries received, and identify some trends. Participants in the conference were nurses representing the administration of the

Nurse-Scientist Graduate Training programs and representatives from the key national nursing organizations.

Since the need for nurses prepared at the doctoral level is becoming more apparent and Federal planning is required, it was timely for Dr. Madeleine Leininger to share the findings of the survey which she conducted as a result of the interest of the American Association of Colleges of Nursing on the issues, needs, and developments in doctoral education for nurses. Dr. Leininger's presentation focuses upon those areas where the nursing profession needs to build an adequate data base upon which to make reasoned decisions, predictions, and recommendations.

DOCTORAL PROGRAMS FOR NURSES: A SURVEY OF TRENDS, ISSUES, AND PROJECTED DEVELOPMENTS

Madeleine Leininger, R.N., Ph.D.

Part I: Trends, Questions, and Issues on Doctoral Programs: Decades of Interest and Challenge

The past and present decades could well be designed as the period of heightened interest in doctoral programs in nursing. Since the early 1960's, several major university schools of nursing have conceived and initiated doctoral programs to prepare nurses for scholarship, research, and leadership roles. [1,2,3,4,5,6] Nursing at the Federal level has supported the development of doctoral programs and fellowship aid for doctoral study. [7,8]

It is the author's belief that nurses with doctoral preparation have ushered in a significant new era in nursing which has markedly increased the scholarship and research thrusts in the nursing field. There is no question that as these nurses began to interact with other graduate students and faculty in university settings, the image of nurses and the nursing profession began to change. As they took leadership positions in education and service settings, their modes of thinking and action patterns revealed them in a different level of sophistication to university colleagues, health service personnel, and consumers. Indeed, doctorally prepared deans and faculties of schools of nursing have taken, and will continue to take, some brave and bold steps in the future, but not without persistent questioning by their colleagues, and especially by those physicians who fail to value and even fear the actual and potential impact of nurses with doctoral preparation. Moreover, the tremendous struggles to initiate most doctoral programs for nurses in universities have been incredible, and these accounts are yet to be forthcoming.

Doctorally prepared nurses continue to challenge other nurses in terms of disciplined modes of thinking, scientific methods of inquiry, and research approaches to nursing education and practice problems. They continue to seek exchanges with other nurse-scholars and with colleagues in institutions of higher learning who are interested in advancing nursing science and improving health care for people. They have stimulated health personnel, research

[1] Numbers in parentheses refer to literature cited in reference list, page 31.

colleagues, administrators, and others to consider anew nursing science phenomena and the great potentials of nurses to change health care practices. Indeed, these doctorally prepared nurses have provided a healthy skepticism about old premises and practices, as they formulate critical problems which need rigorous and systematic investigation. Having a critical mass of doctorally prepared nurse-scholars, researchers, and theoreticians in the nursing field is stimulating new goals and leadership directions.

But, the full and continuing impact of nurses with doctoral preparation is yet to be realized by the nursing profession and the public at large. Nursing scholarship, research, and educational programs in institutions of higher learning will change, as well as nursing service practices. I believe we will see quite a different and highly promising era in nursing during the next two decades. Unquestionably, we will reflect back to those leaders in nursing who were sufficiently visionary and courageous to initiate this new order of sophistication in nursing.

There have been several societal and professional forces that have influenced the development of doctoral programs for nurses. They include: the changing role of women in our society; the declared crisis in health care delivery; the emergence of new types of health care facilities; the evident need for research to systematically examine nursing phenomena; the need to change nursing education programs to fit societal imperatives, and the evident dissatisfaction of consumers with care, cure, and treatment modalities. These factors and others, lead to the need to prepare a cadre of nurse-scholars, researchers, and educational administrators for vigorous health care leadership and for new kinds of role responsibilities. Studying complex sets of nursing care variables, as well as exploring different types of intraprofessional and multidisciplinary education programs have also been evident forces requiring doctorally prepared nurses. It can be anticipated that doctoral programs will continue for years to come, and will exert a significant influence upon the scientific and humanistic delivery of health care services and nursing education programs.

Doctoral education logically grew from master's degree programs in nursing. As one recalls, in the early 1950's the master's degree programs gave emphasis to the preparation of teachers, supervisors, and administrators in nursing. Then in the mid-1960's great emphasis was given to preparing competent clinical nurse specialists, and there was less emphasis upon the functional areas of teaching, administration, and research. As a consequence, a critical shortage of nursing educators, administrators, and nurse

researchers became apparent. Doctoral programs emerged as an effort to help redress these critical leadership needs, but still an acute shortage exists. [10] Both doctoral and master's degree programs should be designed for a close educational interface in order to prepare nurses for complementary leadership roles in nursing.

In general, the broad purpose of doctoral programs is to prepare scholars, researchers, and top leaders in a designated discipline. [11,12] Graduates of doctoral programs are expected to use their acquired knowledge and skills in highly significant ways, especially to advance a particular discipline and to meet societal expectations as a scholar and humanist. Doctoral programs provide opportunities for students to study in an intensive and rigorous manner significant problems in a given field. Students are expected to use systematic and logical methods of inquiry, and to study theories in a chosen field. Still today, the Ph.D. remains the degree to prepare top researchers and scholars in academic and professional fields, and it is the apex of graduate study. It is anticipated that there will continue to be a rise in graduate programs within our national environment of strong technical, economic, political, and social counter forces. [13,14,15] Although professional and academic leaders are exploring new directions for graduate education, in the large part they agree that doctoral education must be a rigorous and disciplined mode of inquiry to improve societal conditions and meet societal imperatives. [16,17,18,19]

It is also expected that doctoral programs in nursing must be designed to prepare highly knowledgeable and competent researchers, clinicians, teachers, and administrators for academic and service settings. As doctoral programs increase in number, it is important that they maintain commitments to highly disciplined modes of thought, quality research work, and demonstrated skills in writing and leadership. If doctoral education for nurses maintains such commitments, the critical leadership crises in nursing would be mitigated; leadership, new scientific and humanistic thrusts will take their place in nursing history. Nurses who are graduates of doctoral programs should have a scientific and humanistic grasp of general and special problems of nursing, and should be prepared to challenge past modes of thought and to risk new kinds of nursing practices. The need for such nurse leaders, researchers, teachers, administrators and practitioners, will remain acute until at least the mid-1980's.

Interestingly, nursing problems and leadership roles tend to be highly complex and multifaceted in nature, and require multidisciplinary foci. Nursing with its holistic and comprehensive

approach to people's health concerns, necessitates a comprehensive psychophysiological and sociocultural perspective, as well as a study of specific phenomena with indepth analyses. Such a broad approach requires nurses to demonstrate analytical skills, make discriminatory judgments, and handle multiple variables to understand many nursing problems under study. In addition, the graduates of a doctoral program in nursing should manifest marked autonomy in thinking, high confidence in professional knowledge and leadership, and systematic methods of inquiry in studying nursing phenomena.

With the current trend toward the acceleration of doctoral programs in nursing, by 1980 (see Part II of this report) the quality of these programs should be established and maintained with strict standards. It behooves nurse leaders to function as peer colleagues in the support of programs with a distinctive quality base, for advanced programs for nurses is one of the most important challenges for the coming decade. Doctoral programs with poorly prepared faculty, limited ongoing research in the school, meager program funds, and inadequate facilities should not be initiated. It is recognized that some nurses may seek a "quick and easy" doctoral program for social status or economic reasons. Graduates of such programs may find themselves ill-equipped for tomorrow's world and for meeting role expectations of employers. All too frequently, these nurses regret that their real capabilities were not challenged by a rigorous and substantive doctoral program.

Key Questions for Deliberation

Challenges and changes are apparent in higher education and for emerging doctoral programs in nursing. Personnel in higher education are concerned with trying new educational approaches without losing sight of noteworthy educational values and standards. [20,21,22] Doctoral programs in nursing, as an integral part of higher education, present some weighty questions for solution. [21] The questions which follow are among those which need to be addressed by doctoral nursing faculty:

1. What should be the major goals and interrelationships of master's and doctoral nursing programs for the future?
2. What kinds of doctoral degree programs do we need? Why?
3. What societal health forces and values have significance for influencing the future nature, direction, and purpose of doctoral education in nursing?
4. What are some of the critical issues—cultural, societal,

political, economical and educational—now creating a need for doctorally prepared nurses?

5. What are the major assumptions undergirding doctoral programs in nursing?
6. What academic standards do nurse-educators believe are essential to initiate and maintain doctoral programs in nursing?
7. What kind of university, State and Federal support can nursing anticipate for high quality doctoral programs?
8. What freedom exists for nursing administrators, faculty, and students to develop doctoral programs capable of mitigating the current nursing leadership crisis and supporting future nursing goals?
9. How can we lessen the traditional norm rigidities of doctoral programs, increase program flexibility, and still retain values and attributes associated with high standards of academic excellence?
10. How can nursing, a largely female profession under traditionally male domination, help to promote support and recognition for doctoral degree programs in nursing?
11. What are the pros and cons of an academic research-oriented doctoral degree as compared with a profession-oriented doctorate?
12. What have been the strengths and limitations of federally supported Nurse-Scientist Programs?
13. How much diversity among doctoral programs in nursing will be needed to meet societal expectations in the future?
14. How can we begin to move with purpose and vigor toward comprehensive *regional graduate nursing programs* to avoid geographic duplication in opportunities for doctoral study?
15. What new areas of *specialization* and *generalization* in graduate nursing study need to be considered in the future? How will these areas differ from the four traditional areas of specialization at the master's and doctoral levels?
16. What are the special attributes required of doctoral nursing faculty?
17. What are the characteristics of an ongoing research and scholarship subculture of a college of nursing which help to insure that doctoral students will pursue substantive research problems and will remain stimulated while enrolled in a doctoral program in nursing?
18. How much financial assistance is necessary for doctoral students, particularly for minority students?

19. How strong a multidisciplinary direction is appropriate for doctoral programs of the future?

Open debate on these and other questions is vital for the development of sound doctoral programs in nursing. They should be discussed not only among nurse leaders, but also with leaders in other disciplines, within the community at large, and in institutions of higher learning.

Some Assumptions to Consider

One of the key assumptions held by the writer with respect to doctoral programs in nursing is that *nursing is a legitimate and important field of graduate study in which faculty and students search to verify nursing knowledge regarding the science and modes of caring, with focus on ways to apply this knowledge to improve and sustain human health.* Another assumption is that doctoral programs in nursing will provide the intellectual climate and the facilities to explicate, formulate, and test knowledge and skills relevant to the scientific and humanistic dimensions of nursing. In order to sustain this assumption, doctoral programs should have a sufficient number of nurse scholars and researchers who are capable of stimulating the systematic study of nursing problems. They should serve as preceptors and models to guide students in doctoral programs by virtue of their own research and scholarship activities. Scholarship attainment and the promotion of scholars in nursing should be the foremost goal of doctoral education in nursing. [24]

Most importantly, it can be assumed that no academic discipline has come into being without substantive research directed to identifying, defining, and refining its knowledge base. Leaders in nursing, therefore, recognize that both basic and applied nursing knowledge are essential for development of a scientific and humanistic body of nursing knowledge. [25,26] Largely generated and refined by scholars of nursing, this core of knowledge is transmitted through a variety of educational processes for application to nursing contexts. *The ultimate goal of most nursing research is to improve the quality of nursing care to people.* Nursing, this author believes, is a basic science field focusing upon caring and caring cultures, but it is also a field of applied science. Most nurse researchers and scholars are expected to: (1) generate knowledge related to caring, and (2) apply their verified knowledge to actual patient care. Moreover, nursing knowledge can and should be used by other disciplines, and should therefore have generalizable at-

tributes and theoretical constructs helpful to others participating in the caring processes.

Being concerned with processes of caring and helping, nurses must have concern for potential and actual health problems and varying sociocultural orientations. Caring, as one of the oldest arts of mankind, is one of the least understood phenomena. And yet, it is probably the most critical variable in helping people attain or regain health. Rigorous inquiry is the approach to understanding and providing therapeutic nursing care interventions. Quality doctoral and master's programs for nurses are the significant means to help the profession systematically explore these care processes and phenomena and to give leadership to the body of nursing science.

The writer further holds to the assumption that doctorally prepared nurses are a national and international asset, and that their preparation is an excellent Federal investment. The American society and other cultures as well would struggle vainly to survive without competent nurses for thousands of people under normal conditions of life and death crises. Somehow, people assume and expect nursing care will be given to them when needed, and yet it has been a struggle for nurses to get public recognition and funds for maintaining this national expectation. In the market idiom of our American culture, one can hold that the products of doctoral and master's degree nursing programs are not only a wise investment, but can be a highly profitable national and international investment.

Still another assumption about the need for doctoral programs for nurses must be stated in that health care in the United States is undergoing some major changes, and nursing as the largest health manpower group must have well-prepared and knowledgeable leaders to provide new modes of health care services. Furthermore, since the nursing profession is responsible to regulate its own destiny, based upon societal inputs, it must move forward to achieve a new kind of health care and different kinds of caring systems, and especially for diverse sociocultural groups. Doctoral programs in nursing can provide an important means to achieve these goals.

Some Critical Issues and Conflict Areas

At present, educators in doctoral programs for nurses are faced with a number of critical issues, paradoxes, and even dilemmas. It is paradoxical in this time of great societal expectations in health care, that Federal and State support funds for nursing are so

limited, uncertain, and generally miniscule. We are encouraged by the prospect of Federal support for "advanced training in nursing" as advocated in Senate Bill Number 66, but still there remains the spectre of uncertainty and the danger of inadequate funding. Unfortunately, support from funds through philanthrophic sources are similarly uncertain and negligible. Thus, the paradox remains: need for graduate nursing education on the one hand; lack of resources to mount and maintain quality graduate programs on the other.

There is in addition the confounding fact that most private and State institutions of higher education are constrained by a mood of reconsolidation and retrenchment. This "no growth" or "steady state period" of the past 5 years has made it extremely difficult for academic administrators to maintain or reenforce their present educational commitments, much less initiate any needed new programs in higher education. This trend for higher education, plus being "on trial" to prove an obvious educational and societal need, is a countervalent force to the critical needs in nursing. Presently, the American public wants and needs quality nursing and health care to be available to *all* people and at costs they can afford. Therefore, quality nurse clinicians, researchers, and leaders of a desired caliber are essential to fulfill this societal expectation. But this goal is difficult to attain when funds are so precarious and meager to nursing, and the philosophy of higher education so constrained and limited.

The paradox is all too familiar. Now at a time when nurse researchers, theoreticians, and scholars in nursing are needed to contribute to health care change, doctoral programs are generally being discouraged due to the "oversupply" of Ph.D.'s and competition for the Federal and State dollar. Moreover, in contrast with other academic disciplines, nursing does *not* have an "oversupply" of Ph.D.'s and has come "late to the table" in its bid for financial support for doctoral education. Now is the time that nursing is ready to improve the quality of nursing care through study and application of emerging research findings that have great potential to change the quality and quantity of health care delivery services to people. The need for a core of nurse researchers to pursue the systematic study of nursing problems is very great now; yet there is limited public awareness about the values of nursing research and limited monies available for nursing research through State, Federal, and private sources. Research progress faces hard times.

These are some of the general paradoxes and the ethos in this period when nursing administrators in universities have been try-

ing to establish or maintain present doctoral programs for nurses. Amid these overwhelming conditions, some progress is being made. However, the number of nurses able to pursue doctoral study in the immediate future is problematic in light of the above-mentioned paradoxes.

There is further hope that as the present core of nurse researchers and nurse scholars make their impact upon improving patient care and educational processes, the public will recognize these achievements and funds will gradually become available. It is fortunate that for many years, the Division of Nursing has steadfastly assisted schools of nursing to get money for research projects and facilities. Also, the nursing research conferences it has supported and its nursing research publications have served to further stimulate interest in nursing practice research.[27,28] Many nurses realize that a heightened thrust of research in nursing is needed to strengthen our body of nursing knowledge for application to nursing practice and to enrich content for doctoral programs in nursing.

It must additionally be realized that obtaining support for higher education and research is only a part of a larger problem. We still have the serious problem of how to prepare a sufficient number of deans of university schools, directors of nursing services, and nursing leaders at the Federal level through doctoral programs of study. The shortage of such well-prepared nurse administrators and leaders is acute and will remain so until such time as their level of educational preparation keeps pace with the demands for their skills and role expectations. Nurses in management roles need doctoral preparation for the systematic study and solution of critical and recurrent administrative problems. The nature of social organizations and cultural systems influencing nursing administrative and multidisciplinary problems are timely areas for their exploration.

Another issue which faces the nursing profession and needs study at the doctoral level has concern for adjusting the nursing role in accordance with cultural patterns, cultural value changes, and social systems. The role of nurses in open and closed health care systems and the activities of nurses in health care maintenance programs and in public educational activities with different cultures, are among the important areas which need to be explored and tested. Students and doctoral faculty in nursing and also interested colleagues in other disciplines can undertake indepth study of nursing and other health care roles as they relate to different population groups. The unique features and components of nursing

practice and the establishment of a classificatory method to order nursing phenomena are areas that remain virtually unexplored. Essential exploration in nursing has lagged because of the dearth of doctorally prepared nurses to undertake rigorous study of the nature, essence, and dominant taxonomic domains of nursing practice. Until these major areas are systematically studied, it will be difficult to fully comprehend the scientific nature, scope, and contribution of nursing to health care delivery systems.

Still another significant issue concerns ways to tighten the gaps between nursing education and practice. Nurses with doctoral preparation should carefully explore these gaps and test approaches to improve patient care, nurse-patient satisfactions, and nursing education programs.

There is also the need for doctorally prepared nurses to explore the development of multidisciplinary health relationships, educational programs, research, and patient care modalities. However, the issue of whether nursing should be involved with multidisciplinary service and education until it has refined its own body of knowledge and systems of practice remains debatable. It might be argued that a multidisciplinary approach helps to identify each discipline's areas of practice and responsibility. I am inclined to be somewhat skeptical of this approach because of the dearth of nurse leaders who are sufficiently knowledgeable to debate, discuss and research multidisciplinary work on a fairly equal collegial basis. Without such collegial interchange, nursing may emerge not as a full-fledged discipline, but rather as an "adjunct" or a "non-distinct" specie. The essence and importance of the unique role of nursing in health care needs continued emphasis by nurses of the highest educational achievements.

Issues related to the Federal Government's shifting from decentralization to centralized management postures poses problems and conflicts in planning for doctoral programs and nursing research endeavors. It is the author's belief that with limited resources and a limited core of nurse leaders prepared at the doctoral level, there is need for carefully conceived national and regional plans for doctoral nursing education and for research programs. Coordination of efforts and avoidance of duplication of specialized programs across the country is imperative. Which educational programs and research activities are to be centralized or decentralized remains a major issue in nursing.

And finally, there is the issue related to the pros and cons of the practice-oriented doctoral degree and the research-oriented doctoral degree. One could well argue that the latter must precede the

former to establish a practice degree program. However, there are leaders who argue conversely that the clinical-based program is a first step to describe and empirically document nursing phenomena. Perhaps additional experience with both types of programs will provide us with answers to this dilemma.

Part II: Survey Findings Relative to Projected Programs of Doctoral Education [1]

The Survey Questionnaire

A survey questionnaire was developed by the investigator based upon her own interest in doctoral programs for nurses and upon receiving inquiries about the number and kinds of doctoral programs for nurses that were being developed or were under consideration for the future. Nurse leaders of the Division of Nursing and of the American Association of Colleges of Nursing had also been raising questions about the facts and the future of doctoral education for nurses. Deans of schools of nursing and Federal administrators wanted to know what new nursing programs in the country were being contemplated, their location, and their academic level. Federal and State monies could not be justified without such baseline data about nursing programs. Although futuristic or projective planning is a responsibility of administrators, educators, and financiers, they had lacked national data essential to such planning. Since the investigator had been active for several years in the development of doctoral programs, in December 1973, she undertook this survey in cooperation with the Division of Nursing and the American Association of Colleges of Nursing.

A two-page questionnaire to elicit data about doctoral education for nurses was sent to 58 nationally accredited schools of nursing offering programs in graduate nursing education. Responses were received from 80 percent or a total of 46 schools. To supplement any missing or ambiguous data from the respondents, the investigator contacted them by phone or mail, consulted their catalogs, and sought other appropriate resources.

The questionnaire was designed to elicit data responses to approximately 30 variables related to such broad concerns as: (1) current number of previously existing and new doctoral programs for nurses; (2) present number of post-master's and doctoral program offerings; (3) plans for establishing doctoral programs and

[1] Tables 2 and 3, in this section, reflect data available at the date of the conference. Data updating these two tables to March 1, 1976, are appended to this paper as tables A1 and A2.

type of degree under consideration; (4) receipt of verbal and written requests from nurses for doctoral study opportunities; (5) potential source of current and future funding to support doctoral programs for nurses; (6) existing numbers and projected needs for nurses with doctoral preparation on a State and regional basis; (7) ongoing research activities in schools to support doctoral programs of study; (8) number of nurse-faculty prepared to contribute to or conduct doctoral programs; and (9) perceived priorities relative to doctoral preparation for nurses. The findings from this survey reflect the status of doctoral programs for nurses and planning for such programs as of January 1974. Certain additional data have made it possible in some cases to present information as of July 1974.

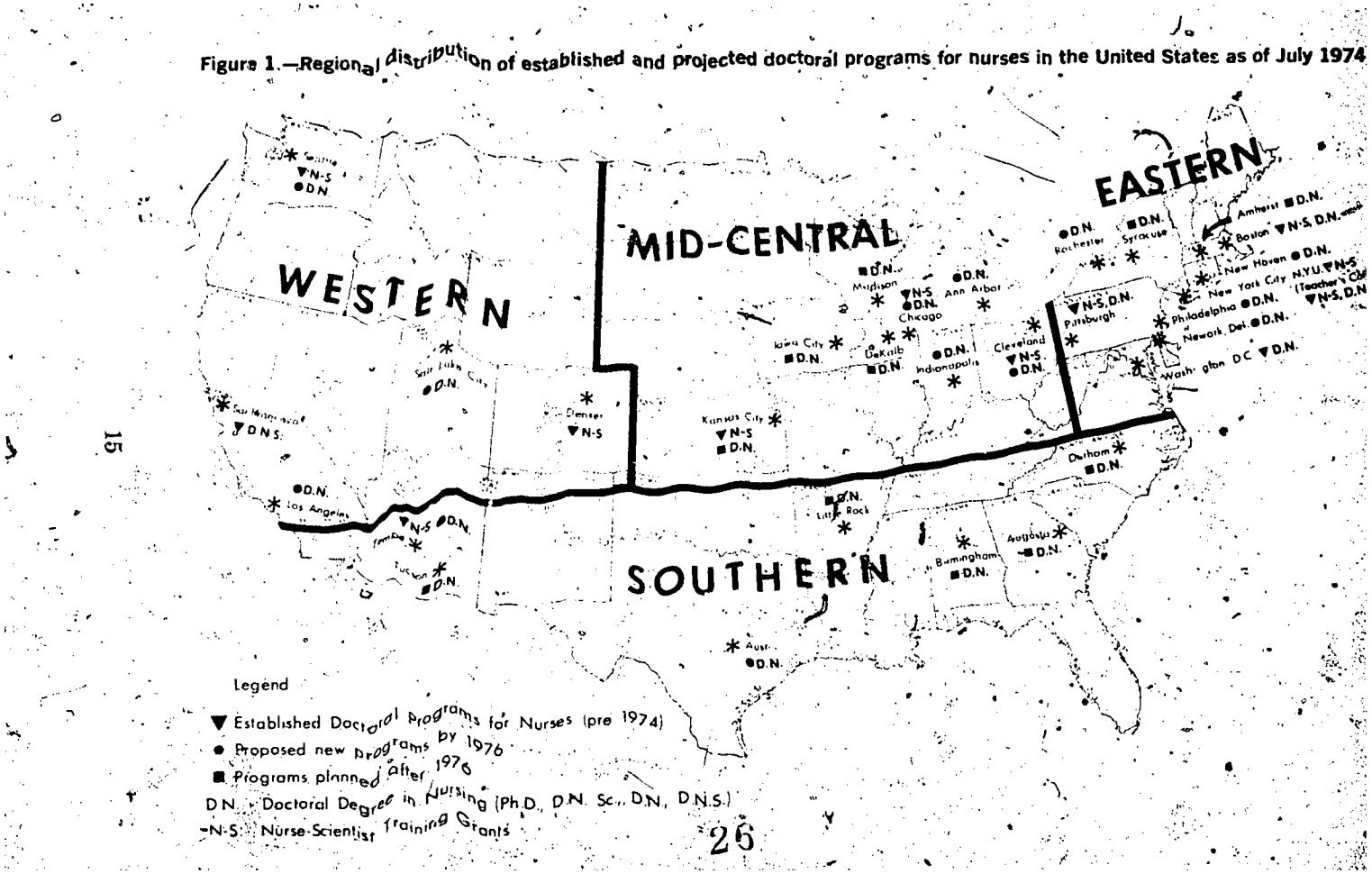
Geographic Distribution of New and Previously Existing Programs

Since geographic factors are of vital importance for national and regional education planning, the investigator classified data with respect to four major geographic areas in the United States; namely, the Eastern, Midcentral, Western, and Southern regions.[2] All data were analyzed to provide a picture of the regional distribution of established and projected doctoral programs for nurses as of July, 1974. Figure I shows the number and kinds of doctoral programs for nurses in each of the four areas. This overall view of doctoral education for nurses in the United States throws into relief the geographical location sites for doctoral study and demographic epicenters for these programs.

Table 1 presents data regarding the universities offering Nurse-Scientist (Ph.D.) Programs with Division of Nursing support during the period 1962 to July 1974. Several of the Nurse-Scientist Program deans or directors said in their survey responses that their program would be phased out within 2 years. Discussion with a Division of Nursing official resulted in similar information.(20) Some survey responses indicated that Nurse-Scientist Programs would be terminated or modified as additional universities proceeded to establish and support programs leading to a doctorate in nursing. Such programs, however, would be contingent upon approval by their graduate school council and institutional boards of

[2] These regions generally follow nursing demographic studies except for the Southern region in this survey. For example, WCHEN has grouped all 13 States together as "Western" without cultural, economic, and social considerations that they tend ethnographically to be more akin to other Southern States as found in the lower region of the United States. Hence, the author's decision to make the Southern States more in line with other general ethnographic and demographic features.

Figure 1.—Regional distribution of established and projected doctoral programs for nurses in the United States as of July 1974



Legend

▼ Established Doctoral Programs for Nurses (pre 1974)
● Proposed new Programs by 1976
■ Programs planned after 1976
D.N. - Doctoral Degree in Nursing (Ph.D., D.N. Sc., D.N., D.N.S.)
-N-S - Nurse-Scientist Training Grants

higher education, as well as upon availability of State or private support.

Table 1.—Universities in the United States with nurse-scientist Ph.D. program grants, from 1962 to July 1974 [1]

University and location	Year grant initiated	Disciplines nurses pursue Doctoral degree (Ph.D.)
Boston University Boston, Massachusetts	1962	Anthropology, Biology, Psychology, Sociology
University of Washington Seattle, Washington	1963	Anthropology, Microbiology, Psychology, Sociology
Case Western Reserve University Cleveland, Ohio	1963	Anthropology, Sociology, Biology, Physiology, Psychology
University of Kansas Kansas City, Missouri	1965	Anatomy, Anthropology, Physiology, Psychology, Sociology, Communication, and Human Relations
Teachers College, Columbia New York City, New York	1966	Anthropology, Psychology, Sociology
University of Colorado Denver, Colorado	1967	Anthropology, Physiology, Psychology, Sociology
University of Arizona Tucson, Arizona	1967	Anthropology, Sociology, Physiology
University of Illinois Chicago, Illinois	1969	Anatomy, Microbiology, Physiology
University of Pittsburgh Pittsburgh, Pennsylvania	1970	Research Training in Clinical Nursing, Maternity Nursing, and Pediatric Nursing
New York University New York City, New York	1974	Nursing

[1] New York University initiated their Nurse-Scientist program after July 1, 1974.
[2] An official from the Division of Nursing said that eight of the above Nurse-Scientist programs will be terminated by December 1975.

Table 2 shows there are seven universities which are now offering doctoral programs in nursing in the United States. Historical data regarding the year the program was initiated, the type of degree awarded and the areas of study are shown on this table.

Table 3 shows as of July 1974 the number and location of new and previously existing doctoral programs for nurses, location, year of establishment, the type of degree offered, and major areas of study. Parenthetically, the data presented in this summary table is of the kind that has been requested during the last 2 years by State and Federal authorities and by nearly 40 graduates of schools of nursing. As evident from the data in tables 3, 4, and 5, there are 12 established doctoral programs for nurses and plans for establishing an additional 22 before 1980.

The geographic distribution of these doctoral programs (table 4) is as follows: 10 programs in the East; 11 in the Midcentral; 7 in the South; and 6 in the West. The phasing out of the 10 Nurse-Scientist Programs, however, will reduce the total to 24.

Table 5, shows that of the 22 projected programs, 12 will offer the doctor of philosophy degree in nursing (Ph.D.) and 7 a professional doctorate in nursing such as the D.N. or D.N.S. degree. The largest number of new programs are projected for the Midcentral region with a total of 8 programs having been planned as of February 1974.

Table 2.—Universities and types of doctoral degree programs in nursing in the United States, as of July 1974

University and location	Year program offered	Type of degree awarded	Areas of study
Teachers College, Columbia University New York, New York	1920's	Ed.D	Nursing Education Nursing Administration
New York University New York, New York	1934	Ph.D. Ed.D.	Nursing Nursing Education Nursing Administration Nursing Specialties
University of Pittsburgh Pittsburgh, Pennsylvania	1954	Ph.D.	Maternity Nursing Pediatric Nursing Psychiatric Nursing
Boston University Boston, Massachusetts	1960	D.N.S.	Psychiatric Nursing
University of California San Francisco, California	1964	D.N.S.	Medical-Surgical Nursing Maternal-Child Nursing Psychiatric Nursing Community Health Nursing
The Catholic University of America Washington, D.C.	1967	D.N.S.	Psychiatric Nursing Medical-Surgical Nursing
Texas Women's University Austin, Texas	1974	Ph.D.	Nursing

Table 3.—Projected and previously established doctoral programs for nurses in the United States, by region, July 1974

School and location	Doctorally prepared faculty	Proposed degree	Year initiated or proposed
I. Eastern Region			
Projected Doctoral Programs			
1. Yale University New Haven, Connecticut	4	Ph.D. in nursing (or D.N.S.)	1975 to 1976
2. University of Delaware Newark, Delaware	4	Ph.D.	1975 to 1976
3. University of Pennsylvania Philadelphia, Pennsylvania	5	N.D.	1975 to 1976
4. Syracuse University Syracuse, New York	3	D.N.S.	1978 to 1979
5. University of Rochester Rochester, New York	11	Ph.D. in nursing	1975 to 1976
6. University of Massachusetts Amherst Massachusetts	1	Dr. in health sciences	1975 to 1976
Established Programs (Nurse-Scientist or Other Programs)			
7. Boston University Boston, Massachusetts	6	N-S, Ph.D. in cognate discipline	1962
8. Teachers College Columbia University New York, New York	5	Ph.D. in nursing N-S, Ph.D. in cognate discipline	1920 1966 (N-S)
9. University of Pittsburgh Pittsburgh, Pennsylvania	5	N-S, Ph.D. in nursing	1970
10. New York University New York, New York	7	N-S, Ph.D., Ed.D. in nursing	1934 1974 (N-S)
II. Midcentral Region			
Projected Doctoral Programs			
1. University of Kansas Kansas City, Kansas	6	D.N.S.	1979
2. University of Michigan Ann Arbor, Michigan	10	Ph.D. in clinical nursing	1975
3. University of Indiana Indianapolis, Indiana	12	D.N.S.	1975
4. University of Wisconsin Madison, Wisconsin	13	Ph.D. in nursing	1979
5. University of Iowa Iowa City, Iowa	9	N.D.	1976 to 1978
6. Northern Illinois University DeKalb, Illinois	7	D.N.S.	1978
7. University of Illinois Chicago, Illinois	25	Ph.D. in nursing	1975

Table 3.—Projected and previously established doctoral programs for nurses in the United States, by region, July 1974—Continued

School and location	Doctorally prepared faculty	Proposed degree	Year initiated or proposed
II. Midcentral Region—Continued			
8. Case Western Reserve University, Cleveland, Ohio	16	Ph.D. in nursing	1974
Established Programs (Nurse-Scientist or Other Programs)			
9. Case Western Reserve University, Cleveland, Ohio	16	N-S, Ph.D. in cognate discipline	1963
10. University of Kansas, Lawrence, Kansas	6	N-S, Ph.D. in cognate discipline	1965
11. University of Illinois, Chicago, Illinois	25	N-S, Ph.D. in cognate discipline	1969
III. Southern Region			
Projected Doctoral Programs			
1. University of Arizona, Tucson, Arizona	8	Ph.D. in nursing	[2]1976
2. Arizona State University	11	Ph.D. in nursing	1976
3. University of Alabama, Birmingham, Alabama	7	D.N.S.	1975–1977
4. Medical College of Georgia, Augusta, Georgia	2	D.N.S.	1975–1977
5. University of Arkansas Medical Center, Little Rock, Arkansas	3	Ph.D. in nursing	1975
Established Programs (N-S or Other Programs)			
6. University of Texas, Austin, Texas	4	Ph.D. in nursing	[2]1975
7. University of Arizona, Tucson, Arizona	10	N-S, Ph.D. in cognate discipline Ph.D.	1967
IV. Western Region			
Projected Doctoral Programs			
1. University of Washington, Seattle, Washington	28	Ph.D. in nursing	1975–1977
2. University of California, Los Angeles, California	13	D.N.	1975
3. University of Utah, Salt Lake City, Utah	6	D.N.S.	1976

Table 3.—Projected and previously established doctoral programs for nurses in the United States, by region, July 1974—Continued

School and location	Doctorally prepared faculty	proposed degree	Year initiated or proposed
IV. Western Region—Continued			
Established Programs (N.S or Other Programs)			
4. University of Colorado Denver, Colorado	11	N.S, Ph.D. in cognate discipline	N.D.
5. University of Washington Seattle, Washington	28	N.S, Ph.D. in cognate discipline	1963
6. University of California San Francisco, California	16	D.N.S. in nursing	1964

[1] N.D. = No data or uncertainty of data.
[2] Was approved as of June 1975.

Table 4.—Total number of nurse-faculty with doctoral degrees and established or planned new doctoral programs for nurses, as of July 1974, per region [1]

Region	Number of nurse-faculty with doctorate	Doctoral programs		
		Established	New	Total
East	51	4	6	10
Midcentral	145	3	8	11
South	45	2	5	7
West	102	3	3	6
Total	343	12	22	34

[1] Emeritus faculty with doctorates who are not directly involved in doctoral program teaching, research and curriculum development are excluded.

Table 5.—Types and number of new doctoral degree programs in nursing being initiated or established in the United States, as of July 1974

Region	Type and number of new degree programs				
	Ph.D. in nursing	D.N. or D.N.S.	Other	Not specified	Total
East	3	1	1	1	6
Midcentral	4	3	0	1	8
South	3	2	0	0	6
West	2	1	0	0	3
Total	12	7	1	2	22

Nurse-Faculty for Doctoral Programs

As revealed in table 3, the distribution of nurse-faculty with doctoral preparation varied considerably from a single faculty member in one school to fully 28 in another. The schools of nursing with the largest number of doctorally prepared nurse-faculty as of February 1974 were as follows: University of Washington, 28; University of Illinois, 25; University of California at San Francisco, 16; and Case Western Reserve University, 16. The remaining schools of nursing had a range of from 1 to 13 nurse-faculty with doctoral preparation.[30]

As additionally shown in table 4, the number of doctorally prepared nurse-faculty within institutions offering or contemplating doctoral programs totals 343. This reflects approximately a mean of 14 doctorally prepared nurse-faculty for the present proposed 24 doctoral programs (i.e., 2 continuing Nurse-Scientist Programs and 22 new or established doctoral programs in nursing). Undoubtedly, many of these faculty have heavy administrative and teaching responsibilities which limit their time for contributions to nursing and research and instruction in their doctoral program. By 1980, hopefully, doctoral programs will have a sufficient number of doctorally prepared faculty to insure program quality. In several universities, non-nurse faculty members contribute directly or indirectly to doctoral programs for nurses, and especially for the Nurse-Scientist Programs.

Preferred Type of Doctoral Degree

The survey respondents were asked to indicate whether they preferred to support a practice-oriented professional degree such as a D.N.S., or research-oriented academic degree such as a Ph.D. (These types of degrees have been identified and described by the American Council of Graduate Schools.) As indicated in table 6, 26 of the 46 respondents favored the research-oriented Ph.D. degree; 16, the practice-oriented degree. Several commented that they felt the Ph.D. research-oriented degree was essential to verifying and adding to the body of nursing knowledge, and that it should predate the professionally oriented degree. The proponents of the latter degree, however, felt that research should be an integral part of a professional degree and that this degree could provide a clinical empirical approach to nursing knowledge.

Information elicited regarding the number of nurses interested in doctoral study and their degree preferences appears in table 7.

Ten of the schools did not respond to this item of inquiry. From the responses of the 36 others, however, it appears that in 1973 they had received a total of 818 inquiries from nurses interested in doctoral study. The largest number of inquiries were from the Midwest, Western, and Southern regions of the country. This finding is an important clue to the number of nurses seeking doctoral preparation and a base for predicting future requests.

Another important finding revealed in table 7, is that there is a definite trend toward the acquisition of doctorates in nursing rather than in a non-nursing discipline. Fully 267 nurses made spontaneous requests for a doctoral degree *in nursing*; only 55 nurses preferred to earn a doctoral degree in such areas as anthropology, sociology, or psychology, etcetra. Several deans of schools of nursing said they would be seeking and employing nurses with a nursing doctorate, rather than a doctorate degree in a cognate discipline.

Table 6.—Type of doctoral degree preferred by dean or director of school of nursing, per region

Region	Research-oriented degree (Ph.D.)		Practice-oriented degree (D.N., D.N.S.)		Total
	Yes	No	Yes	No	
East	7	1	3	1	12
Midcentral	9	—	5	1	15
South	4	—	5	—	9
West	6	—	3	1	10
Total	26	1	16	3	46

Table 7.—Total number of requests in 1973 from nurses to pursue doctoral study and type of degree requested

Region	Total nurse requests (1973)	Schools with no reply	Types of doctoral degree requested		
			Doctorate in nursing	Doctorate non-nursing	No reply
East	175	3	72	8	20
Midcentral	254	3	70	12	18
South	190	2	50	20	30
West	199	2	75	15	10
Total (N—46)	818	10	267	55	78

Estimated Number of Master's and Post-Master's Nursing Students

Two questions were asked to facilitate cogent planning for doctoral programs, namely, (1) what is the total enrollment of full- and part-time master's degree nursing students for the 1972-73 and the 1973-74 academic year?; and (2) if you have a post-master's degree program, what is the total enrollment for these respective academic years? The responses as shown in table 8 indicate that there were an estimated 7,283 students in master's programs during those years. Of the 46 responding schools, 40 replied to both questions. Table 8 indicates a slight decrease in total enrollment in 1973-74 compared with the preceding year (due possibly to the uncertain availability of graduate traineeships). Data from the Eastern region show a marked trend to part-time study, whereas in the Midcentral region there was a marked increase in full-time enrollment. Moderate shifts in enrollment were noted for the Southern and Western regions.

Table 9 shows that there were roughly an average of 185 full- and part-time students in post-master's programs in nursing in the United States from 1972 to 1974 with a total estimate of 370 students. These findings have some importance for predicting the potential number of applicants for doctoral study. A total potential of 7,653 master's and post-master's students from 40 schools of nursing (approximately 70 percent of a total of 58 graduate programs) argues forcefully for planning to increase the availability of doctoral programs. If even one-fourth or roughly 2,000 of the master's and post-master's students moved toward doctoral study, within a short period of time we may well face an educational demand, and nurses would again turn to doctoral study in non-nursing disciplines.

Costs and Financial Support for Doctoral Programs

The survey respondents were asked whether their schools of nursing had adequate State ("hard") monies to support a doctoral program for nurses. Table 10 reveals that 41 of the 46 responding schools felt that State funds to maintain a doctoral program were inadequate.

The responses in table 11 reflect more than a 3 to 1 probability that adequate State or non-State funds for doctoral programs would not be forthcoming. The uncertainty on non-State funds from Federal and private sources was clearly evident in their responses.

Table 8.—Total number of full- and part-time master's degree students in 40 schools of nursing in the United States during 1972–73 and 1973–74 academic years

Region	Time period	1972–73	1973–74	Totals
East	Full time	1,020	840	1,860
	Part time	359	755	1,114
Midcentral	Full time	519	608	1,127
	Part time	406	160	566
South	Full time	405	320	725
	Part time	242	148	390
West	Full time	637	665	1,302
	Part time	100	99	199
Total		3,638	3,595	7,283

Table 9.—Total number of full- and part-time post-master's students in 1972–73 and 1973–74 in the United States

1972–73	1973–74	Totals
Full time = 71	Full time = 58	129
Part time = 129	Part time = 112	241
Total = 200	Total = 170	370

Table 10.—Adequacy of State (hard funds) for doctoral programs in schools of nursing

Region	Adequacy of funds	
	Yes	No
East	1	14
Midcentral	1	14
South	2	7
West	1	6
Total (N—46)	5	41

Table 11.—Belief that schools of nursing could get State or non-State funds for doctoral programs for nurses

Region	State funds		Non-State funds		
	Yes	No	Yes	No	Unsure
East	0	12	0	10	4
Midcentral	5	12	1	7	5
South	4	6	0	6	4
West	1	6	1	2	6
Total (N—46)	10	36	2	25	19

A survey question regarding the direct cost of doctoral programs and research costs ranging from $20,000 to $354,000. These estimates excluded indirect costs such as library usage, physical maintenance of the classrooms, central university administration costs, etcetra. The highest mean cost was in the Southern region with a mean estimate of $225,000 for the fiscal year 1972–73. It is indeed evident that the costs to conduct a doctoral program can neither be casually absorbed nor overlooked, and vary considerably by institution. It must also be recognized that, as the smaller doctoral programs grow to meet increasing student numbers, their costs will increase proportionately.

As to the degree of financial support for doctoral programs in 1972–73, the investigator also wondered if the present doctoral programs were more than 50 percent or less than 50 percent supported by Federal monies. The responses indicated that 10 of the 12 doctoral programs for nurses were federally supported by less than 50 percent. However, all but 2 of the 12 established doctoral programs for nurses were receiving some Federal funds. The concern to get adequate State funds was expressed by the respondents as well as the necessity to project realistic cost estimates for doctoral programs. This survey reaffirms the need for both Federal and State support for doctoral programs, and for precise planning to meet budgetary requirements.

Annual Nurse Traineeship Requirements

Each survey respondent was asked to estimate the number of traineeships needed each year for students studying at predoctoral, doctoral, and postdoctoral levels. The findings reported in table 12 indicate an estimated annual requirement of 952 traineeships. Nurses in predoctoral study and nurses completing doctoral candidacy requirements (approximately 435 in each group) were most in need of traineeship assistance.

The question relative to preference for individual fellowship or institutional fellowship program (the former going directly to the student and the latter to the institution for support of doctoral study) is the concern of table 13. Deans of 17 nursing programs preferred individual fellowship support and 18 preferred institutional grants. There were 11 respondents who were uncertain of their preference and of these, several did not understand the differences in the two approaches. The majority of the deans said it would be impossible to conduct a doctoral nursing program without support from Federal, State, or private resources. They also

Table 12.—Estimated number of nurse traineeships desired per year for: predoctoral, doctoral candidacy, and postdoctoral studies

Region	Predoctoral	Doctoral candidacy	Postdoctoral	Total
East	145	163	29	237
Midcentral	123	102	25	250
South	115	105	16	236
West	54	63	13	130
Total	437	433	82	952

Table 13.—Preference of deans for individual fellowship over an institutional doctoral support program

Region	Yes	No	Uncertain
East	5	5	3
Midcentral	5	5	6
South	4	4	2
West	3	4	0
Total (N—46)	17	18	11

Table 14.—Opinion regarding adequacy of nursing research activity to support doctoral study for nurses

Region	Yes	No	No response
East	3	8	2
Midcentral	2	13	1
South	0	9	1
West	2	4	1
Total (N—46)	7	34	5

Table 15.—State role positions anticipated for nurses who have completed doctoral study (1973), by region [1]

	Estimated number of nurses with doctorates and roles for 1973						
		Administration					
Region	Research	Schools of nursing	Nursing services	Teaching	Clinical practice	Consultation	Total
East	55	51	60	280	231	52	729
Midcentral	100	110	205	224	113	42	794
South	20	42	20	108	10	18	218
West	30	21	18	61	45	25	200
Totals	205	224	303	673	399	137	1,941

[1] Forty (70 percent) of the schools of nursing with graduate programs replied.

made it clear that the individual fellowship (which generally pleases the student) does not cover administrative costs to conduct a doctoral nursing program.

Adequacy of Nursing Research Activity to Support Doctoral Programs

An essential requirement for any doctoral program is the need for an active ongoing research program in the school. Survey respondents were asked to comment on the adequacy of such research programs in their schools. Table 14 shows that 34 (or 65 percent) of the 46 deans or directors of graduate programs felt they did not have an adequate nursing research program to support doctoral education for nurses. Seven schools felt they did have an adequate research program, and five schools did not respond to this question. The two dominant reasons for regarding a research program as inadequate were: (1) the lack of a sufficient number of well-prepared doctoral nurse-faculty to give leadership to such a research program, and (2) the lack of funds and faculty time to conduct nursing research projects. The majority of deans expressed these two needs as high priorities and as most critical needs.

Number and Roles of Doctorally Prepared Nurses

As the national need for doctorally prepared nurses had not been previously estimated, respondents were asked their views concerning this need and concerning roles for nurses with doctorates at the time of the survey (1973), and 5 years hence (1978). Table 15 provides the role positions estimated within each dean's State for 1973. This national crude estimate indicates that as of 1973 the requirement was for 1,941 doctorally prepared nurses. The greatest need was for teachers, the next for nurse-clinicians, the third greatest for administrators of nursing service, and the fourth for administrators of schools of nursing. Research and consultation were viewed respectively as the next priorities. The Midcentral and Eastern regions indicated the greatest need for nurses with doctoral preparation; the Western and Southern regions showed considerably less need. These findings provide directional possibilities for potential utilization of nurses with doctoral preparation.

Table 16 presents opinion relative to State role positions for nurses with doctorates in the year 1978. The survey respondents deemed that nearly 3,000 doctorally prepared nurses will be needed by 1978. The estimated priorities are as follows: teaching, 889;

Table 16.—Estimated State role positions anticipated for nurses with doctorates in year 1978[1]

Region	Estimated number of nurses with doctorates and roles by 1975								
		Administration							
	Research	Schools of nursing	Nursing services	Teaching	Clinical practice	Consultation	HSR	Other roles	T
East	117	60	70	360	305	80	25	14	1
Midcentral	150	180	180	290	120	85	40	30	
South	75	61	44	85	50	41	30	0	
West	67	37	58	154	110	48	24	23	
Totals	409	243	352	889	585	254	119	67	2

[1] Forty (70 percent) of schools of nursing with graduate programs replied.
[2] Health science roles.

Table 17.—Estimates of number of doctoral nurse vacancies in respondent's State and regional areas as of December 1973 and 19

Region	Present vacancies (December 1973)		Schools with no reply	Vacancies in 5 years (1978)		Schools with no reply	Estimate total nurs needed by 197
	State	Region	Region	State	Region	Region	
East	323	300	4	725	1,020	6	2,568
Midcentral	918	515	5	775	330	8	2,538
South	170	1,700	4	260	1,300	5	3,030
West	83	127	2	155	240	2	605
Totals	1,494	2,442	15	1,915	2,890	21	8,741

[1] Total number of schools of nursing replying to questionnaire was 46.

le 16.—Estimated State role positions anticipated for nurses with doctorates in year 1978[1]

	Estimated number of nurses with doctorates and roles by 1975								
		Administration							
	Research	Schools of nursing	Nursing services	Teaching	Clinical practice	Consultation	HSR	Other roles	Total
------	117	60	70	360	305	80	25	14	1,031
------	150	180	180	290	120	85	40	30	980
------	75	61	44	85	50	41	30	0	386
------	67	37	58	154	110	48	24	23	521
------	409	243	352	889	585	254	119	67	2,918

of schools of nursing with graduate programs replied.
ns.

s of number of doctoral nurse vacancies in respondent's State and regional areas as of December 1973 and 1978[1]

	Present vacancies (December 1973)		Schools with no reply	Vacancies in 5 years (1978)		Schools with no reply	Estimated total nurses needed by 1978
	State	Region	Region	State	Region	Region	
----------	323	500	4	725	1,020	6	2,568
----------	918	515	5	775	330	8	2,538
----------	170	1,300	4	260	1,300	5	3,030
----------	83	127	2	155	240	2	605
----------	1,494	2,442	15	1,915	2,890	21	8,741

chools of nursing replying to questionnaire was 46.

administration, 595; clinical practice, 585; research, 409; consultation, 254; and 119 for health science roles. The shift in estimates from the 1973 predictions indicates increased requirements for nurse researchers and for nurses prepared to assume leadership in health science roles. The table shows that greatly increased need within a 5 year period was anticipated in the Western area, and the East and Midcentral regions gave the highest estimate of projected needs for doctorally prepared nurses.

Table 17 reflects an estimated 8,741 vacancies for nurses with doctoral preparation in the respondents' States and regional areas. Inasmuch as this country had only 1,200 doctorally prepared nurses in 1974, we will have to accelerate doctoral preparation very markedly if we are to meet projections for 1978.[31] These projections of perceived need may be greater, as there were 15 respondents who were unable to make guestimates.

Table 18 of this survey reports estimates of the need for doctorally prepared nurse clinicians, particularly for clinical nursing specialists, as of 1973. The estimates indicate a 2 to 1 ratio of specialists to generalists with the Midcentral and Eastern regions giving the largest need estimates.

Table 18.—Estimated number of nurse specialists and generalists as practitioners needed in State as of December 1973

Region	Specialists	Generalists	No reply
East	260	73	7
Midcentral	260	117	7
South	80	40	3
West	65	54	3
Totals	665	284	[1]20

[1] Of 46 schools replying.

Three Greatest Priorities Related to Preparation of Nurses with Doctoral Preparation

The last survey question solicited opinion regarding the *three* greatest priorities in relation to the preparation of nurses for doctoral study. In three of the four geographic regions in the United States, there were three dominant first-priority needs given in rank order, namely, (1) more well-prepared faculty to teach and do nursing research in master's and doctoral nursing programs; (2) development of nurse researchers and acceleration of nursing research activity; and (3) support funds for schools of nursing with doctoral programs. The Southern region held as their

first three priorities: (1) need for doctoral programs; (2) funds to support doctoral programs; and (3) clinically oriented faculty to teach in master's and doctoral programs.

The second list of priority needs in general rank order for the four regions put emphases on: (1) well-prepared deans of schools of nursing to guide the development of doctoral programs in nursing; (2) funds to employ faculty with demonstrated teaching and clinical research skills; and (3) development of nursing theory and basic research to strengthen doctoral programs. This first priority undoubtedly reflected the fact that when this survey was done (December 1973) there were 35 dean vacancies.[32]

The third theme of priority needs spoke to increasing the number of strong nurse leaders for community action; the pool of master clinicians; the corps of theory developers in nursing; nursing capabilities in public relations; and the influx of Federal and State funds to support doctoral programs and provide students with traineeships for doctoral study. Another repeated theme was the need for improved nursing service settings to support doctoral programs.

Summary

In this paper the author has presented two areas for the reader's consideration. Part I focused on trends, questions, issues, and planning for doctoral programs in nursing, and Part II on findings from a survey to obtain national information relative to doctoral study and requirements for nurses with doctorates. These survey findings offer important directions and facts for doctoral programs in the United States as of July 1974, as well as issues and questions to be addressed.

As the development of doctoral programs continues, we must keep foremost in mind the importance of quality-based programs, well-prepared faculty, a vigorous subculture of research and scholarly achievements in schools offering doctoral programs for nurses.

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Table A1.—Universities and types of doctoral degree programs in nursing in the United States as of March 1, 1976[1]

Universities and location	Year program offered	Type of degree awarded	Areas of study
Teachers College, Columbia University New York, New York	1920's	Ed.D.	Nursing Education Nursing Administration
New York University New York, New York	1934	Ph.D. Ed.D.	Nursing Nursing Education Nursing Administration Nursing Specialties
University of California San Francisco, Calif.	1964	D.N.S.	Medical-Surgical Nsg. Maternal-Child Nsg. Psychiatric Nursing Community Health Nsg.
The Catholic University of America Washington, D.C.	1967	D.N.S.	Psychiatric Nursing Medical-Surgical Nsg.
University of Pittsburgh Pittsburgh, Pennsylvania	1970	Ph.D.	Maternity Nursing Pediatric Nursing Psychiatric Nursing
Boston University Boston, Massachusetts	1972	D.N.Sc.	Psychiatric Nursing
Case Western Reserve Univ. Cleveland, Ohio	1972	Ph.D.	Nursing
Univ. of Texas System			
a. Austin, Texas	1974	Ph.D.	Nursing
b. San Antonio, Texas	1975	Ph.D.	Nursing
University of Illinois Chicago, Illinois	1975	Ph.D.	Nursing
Texas Women's University Denton, Texas	1975	Ph.D.	Nursing
University of Arizona Tucson, Arizona	1975	Ph.D.	Nursing
Wayne State University Detroit, Michigan	1975	Ph.D.	Nursing
University of Alabama Birmingham, Alabama	1976	D.N.S.	Nursing

[1] These are doctoral degree programs in nursing and not Nurse-Scientist Programs in cognate disciplines.

Table A2.—Summary of new and established doctoral programs for nurses in the United States as of March 1, 1976 [1]

School and location	Doctorally prepared faculty February 1974 [2]	Doctorally prepared faculty March 1, 1976 [3]	Type of degree	Year initiat or propose date
	I. Eastern Region			
Doctoral programs planned				
1. Yale University, New Haven, Connecticut	4	5	Ph.D. in nursing (or a D.Sc.N.)	1977
2. University of Delaware, Newark, Delaware	4	4	U.D.	Not be 1980
3. University of Pennsylvania, Philadelphia, Pennsylvania	5	6	D.N.S.	1977
4. Syracuse University, Syracuse, New York	3	3	D.N.S.	1980
5. University of Rochester, Rochester, New York	11	10	Ph.D. in nursing	1977
6. University of Massachusetts, Amherst, Massachusetts	1	9	Ph.D. in health sciences	1978
Established Programs (N·S or other)				
7. Boston University, Boston, Massachusetts	14	20	N·S in cognate disciplines D.N.Sc.	1962 1972
8. Teachers College, Columbia University, New York, New York	5	9	Ph.D. in nursing N·S, Ph.D. in cognate disciplines	1920 1966
9. The Catholic University of America, Washington, D.C.	6	9	D.N.Sc.	1967
10. University of Pittsburgh, Pittsburgh, Pennsylvania	5	18	N·S, Ph.D. in nursing	1970
11. New York University, New York, New York	7	21	Ph.D., Ed.D. in nursing N·S, Ph.D. in nursing	1934 1974
Total, Eastern Region	65	111		

mary of new and established doctoral programs for nurses in the United States as of March 1, 1976[1]

ol and location	Doctorally prepared faculty February 1974[2]	Doctorally prepared faculty March 1, 1976[3]	Type of degree	Year initiated or proposed date
	I. Eastern Region			
lanned				
ity	4	5	Ph.D. in nursing (or a D.Sc.N.)	1977
Connecticut				
Delaware	4	4	U.D.	Not before 1980
ware				
Pennsylvania	5	6	D.N.S.	1977
Pennsylvania				
versity	3	3	D.N.S.	1980
w York				
Rochester	11	10	Ph.D. in nursing	1977
ew York				
Massachusetts	1	9	Ph.D. in health sciences	1978
ssachusets				
(N-S or other)				
rsity	14	20	N-S in cognate disciplines	1962
achusetts			D.N.Sc.	1972
lege	5	9	Ph.D. in nursing	1920
versity			N-S, Ph.D. in cognate disciplines	1966
w York				
University of America	6	9	D.N.Sc.	1967
D.C.				
Pittsburgh	5	18	N-S, Ph.D. in nursing	1970
nnsylvania				
versity	7	21	Ph.D., Ed.D. in nursing	1934
w York			N-S, Ph.D. in nursing	1974
gion	65	111		

II. Central Region				
Doctoral programs planned				
1. University of Kansas Kansas City, Kansas	6	5	Ph.D. in nursing	1980
2. University of Michigan Ann Arbor, Michigan	10	12	Ph.D., clinical nursing	1975
3. University of Indiana Indianapolis, Indiana	12	16	D.N.S.	1976
4. University of Wisconsin Madison, Wisconsin	13	16	Ph.D. in nursing	1980
5. University of Iowa Iowa City, Iowa	9	15	Ph.D. in nursing	1980
6. Northern Illinois University DeKalb, Illinois	7	11	D.N. (teacher scholar)	After 198
7. Wayne State University Detroit, Michigan	7	11	Ph.D. in nursing	1975
Established programs (N-S or other)				
8. University of Illinois Chicago, Illinois	25	53	Ph.D. in nursing	1975
9. Case Western Reserve University Cleveland, Ohio	16	20	N-S, Ph.D. in cognate disciplines Ph.D. in nursing	1963 1972
10. University of Kansas Kansas City, Kansas	6	5	N-S, Ph.D. in cognate disciplines	1965
Total, Central Region	105	159		

See footnotes at end of table.

II. Central Region				
lanned				
Kansas	6	5	Ph.D. in nursing	1980
Kansas				
Michigan	10	12	Ph.D., clinical nursing	1975
Michigan				
Indiana	12	16	D.N.S.	1976
Indiana				
Wisconsin	13	16	Ph.D. in nursing	1980
sconsin				
Iowa	9	15	Ph.D. in nursing	1980
wa				
ois University	7	11	D.N. (teacher scholar)	After 1980
is				
University	7	11	Ph.D. in nursing	1975
gan				
(N-S or other)				
Illinois	25	53	Ph.D. in nursing	1975
ois				
Reserve University	16	20	N-S, Ph.D. in cognate disciplines	1963
			Ph.D. in nursing	1972
Kansas	6	5	N-S, Ph.D. in cognate disciplines	1965
Kansas				
ion	105	159		

of table.

Table A2.—Summary of new and established doctoral programs for nurses in the United States as of March 1, 1976 [1]—Continue

School and location	Doctorally prepared faculty February 1974 [2]	Doctorally prepared faculty March 1, 1976 [3]	Type of degree	Year initiated or proposed date
III. Southern Region				
Doctoral programs planned				
1. Arizona State University, Tempe, Arizona	11	12	Ph.D. in nursing	1978
2. University of Alabama, Birmingham, Alabama	7	15	D.N.S.	1976
3. Medical College of Georgia, Augusta, Georgia	2	5	D.A. in nursing	1977
4. University of Arkansas Medical Center, Little Rock, Arkansas	3	3	D.N.S.	1980
Established programs (N-S or other)				
5. University of Arizona, Tucson, Arizona	10	12	Ph.D. in nursing	1974
6. University of Texas System School, Austin, Texas	3	11	Ph.D. in nursing	1974
San Antonio, Texas	2	5	Ph.D. in nursing	1975
7. Texas Women's University, Denton, Texas	4	6	Ph.D. in nursing	1975
Total, Southern Region	42	69		

abilished doctoral programs for nurses in the United States as of March 1, 1976 [1]—Continued

	Doctorally prepared faculty February 1974 [2]	Doctorally prepared faculty March 1, 1976 [3]	Type of degree	Year initiated or proposed date
	III. Southern Region			
----------	11	12	Ph.D. in nursing	1978
----------	7	15	D.N.S.	1976
----------	2	5	D.A. in nursing	1977
----------	3	3	D.N.S.	1980
----------	10	12	Ph.D. in nursing	1974
chool ------	3	11	Ph.D. in nursing	1974
----------	2	5	Ph.D. in nursing	1975
----------	4	6	Ph.D. in nursing	1975
----------	42	69		

IV. Western Region				
Doctoral programs planned				
1. University of Washington, Seattle, Washington	28	26	Ph.D. in nursing	1976
2. University of California, Los Angeles, California	12	15	D.N.	1976
3. University of Utah, Salt Lake City, Utah	3	20	Ph.D. in nursing	1976
4. University of Colorado, Denver, Colorado	11	19	Ph.D. in nursing	U.D.
Established programs (N-S or other)				
5. University of Colorado, Denver, Colorado	11	19	N-S, Ph.D. in cognate discipline	1976
6. University of Washington, Seattle, Washington	28	26	N-S, Ph.D. in cognate discipline	1963
7. University of California, San Francisco, California	16	18	D.N.S.	1964
Total, Western Region	70	98		

See footnotes at end of table.

[1] All Nurse Science Federal funds will terminate November 1976.

[2] Number of active nurse faculty with doctoral preparation in schools of nursing as of February 1974, emeriti faculty excluded. Total=282.

[3] Number of active nurse faculty checked directly with dean, director, or current catalog as of March 1, 1976. Total=437.

[4] U.D.=uncertain data.

EDITED TRANSCRIPT OF DISCUSSION

Dr. Gortner: What kinds of programs do we need and why? How should they be distributed? What is the nature of university support for doctoral education? Is centralized national planning desirable for doctoral education? Should there be some sort of national coordination with regard to doctoral education? How is the known and probably very desirable diversity in graduate education accommodated? What counsel, advice, or impact might those programs experienced in preparing nurses at the doctoral level afford? And what should be the nature of a role that those programs should take?

We might begin by addressing the basis of university support for doctoral education.

Ms. Holmquist: We need to consider the effect that the boards of higher education are having within the States about the need for all programs. In order for any new program to be started or to be considered for funding, they must go through boards and be approved. State board control may work in two ways, it might be helpful in that if you do get approval your possibility for funding is greater, on the other hand, they may work to stifle some of your plans.

Dr. Palmer: Only the State-supported programs need this type of approval; programs planned in the private sector do not necessarily go through State boards of higher education. The development of State boards of higher education points out the need to be very sensitive to the role of elected legislators whether in a public or private system, as well as to the role of the Board of Higher Education. These boards have great control over public institutions in some States, such as New York. They also have control over private institutions in that the institutions must register their programs with the board of regents. As private institutions ask for more and more State support they become more regulated.

Dr. MacPhail: In States such as Ohio, private universities get little or no State support and are not subjected to these types of review. But within our universities there is careful assessment of what programs will survive in terms of their cost effectiveness.

Dr. Palmer: We still face the eternal question of why a nurse needs a doctoral degree. We need to educate our colleague deans, those in other departments, and demonstrate what nursing research is about so that they will have some perspective as to what we are doing and why.

Dr. Courtney: But exactly what do we need in nursing, where do we build from here? Until we know in what direction we are going, it will be very difficult for us to present the type of image we might like to present.

Dr. Rothberg: There needs to be a planning conference of schools of nursing to include representation by schools which have doctoral programs of whatever form. Additionally, this conference should include directors of programs in the process of development.

Dr. Lohr: It would be very useful at such a conference to prepare position papers on some of the central issues so that we could base our discussion upon them.

Dr. Palmer: If we do not cogently plan for doctoral education geographically across the Nation, we will be in the same predicament as we are in with baccalaureate and master's programs.

Dr. O'Koren: In some instances, program planning of the nature we are discussing becomes entirely a legislative matter based upon the politics of the States.

Dr. Courtney: With Federal monies involved in planning, however, perhaps we can get some overall coordination.

Dr. Krueger: We need some overall plan for how many programs are needed, what types of programs, and the distribution of these programs. But to begin, we have to realistically appraise which States would encourage the development of doctoral programs in nursing and proceed from there.

Dr. Erickson: It is not only the State climate, but also that within the university that is of importance. In our setting, academically we are under the Council of Higher Education at the University, but fiscally we are under the Vice Chancellor for the Health Professionals. I have no difficulty with my colleagues in other disciplines, but medicine does not see why nurses need Ph.D.'s.

Sister Bernadette: Much could be accomplished by holding a series of conferences. The conferences would serve to help those Directors who are planning programs to see the scope of the problems faced, financial problems as well as those of university support. Without the support of universities, I doubt that much can be accomplished. We also need to plan how we can establish a relationship with Councils on Higher Education. To accomplish this we need to bring together those who are seeking to establish doctoral programs with those who have already been involved in doctoral programs.

Dr. Leininger: We need to look carefully for university settings where there is encouragement and support, and capitalize on them by helping them develop their resources.

Dr. Krueger: The idea of a portable scholarship might be one thing that would help us.

Dr. Pitel: With the current trends we have discussed, not only do we need theoretical bases of nursing science, but we need to transfer this into clinical practice and demonstrate improvement of patient care based on the application of our research. When we do this we will be able to attract money within these practice institutions to develop research. If there are postdoctoral monies available, let us develop research institutes within our universities. We need to vitalize our research models in the practice settings and not keep ourselves confined to academia. This is what students are asking for. And they are asking for the flexibility of transferring credits from one institution to another. This could be accomplished by developing consortia. Why don't we plan together in States in some consortial fashion? This may be a very good, tangible way to say we are planning in an economically feasible manner that could be communicated to State legislators and Federal government.

Dr. Gortner: I would like to comment on another important point raised, and that is the need for areas of excellence in research. In line with the institutional fellowship program is the idea of an outstanding preceptor, an outstanding research scholar in given short-area fields to whom could be awarded, on the basis of a competitive application, a selected number of fellowships for graduate students, and postdoctoral fellows to work under his immediate supervision. There are nursing concerns that really need to be addressed in a concerted research effort. Do you think we have the capability presently for such predoctoral or postdoctoral work in certain fields? By this I mean institutional capability, faculty ongoing work and in what areas of study.

Ms. Rubin: I think the clinical fields are the most important.

Dr. Courtney: It seems to me that our priorities would have to be upon the predoctoral people.

Dr. Krueger: Aren't you really asking where the reservoirs of research are, and who the people are that are producing the research?

Dr. Leininger: In cardiovascular nursing we have four faculty at work. Students with portable fellowships might come to study with these researchers. This kind of thing would give impetus to the further development of predoctoral programs, and would strengthen and enrich programs to the extent that these programs were ongoing and producing substantive research.

Dr. Pitel: Ultimately what our recommendation should be is that just as we see a National Institute of Arthritis, there should also

be a National Institute of Nursing Research, and under it a number of subdivisions.

Dr. Leininger: What would happen if we had a core of people working in areas such as oncological or cardiovascular nursing or on problems related to the health care delivery system? Could we get funds for research in these areas that would contribute to our really critical predoctoral needs?

Ms. Rubin: We've got some real problems in that many of our excellent people have no time to think, or to do their own projects. They are advanced into administration so fast that they can't put their expertise to use in patient care where it really would count. We need well-prepared nurses in all aspects of nursing.

Dr. Courtney: We certainly need people in administration who are prepared at the doctoral level.

Dr. Crowley: Maybe we should develop a few centers instead of diverting our efforts to provide more administration and more faculty. If we recognize this nationally as a priority and are willing to work for it, it might be possible to accomplish.

Dr. Leininger: The ANA Council of Nurse Researchers might be helpful in delineating some of the key research areas in developing clusters of interest. We also need to be involved in our universities in interdisciplinary research. In many settings they are setting up such things as oncology centers to which different disciplines are contributing.

Dr. Jacobi: Nursing has an obligation to help individuals maintain their nursing identification as they move into these different fields.

Dr. Crowley: There are different ways in which we might look at the research emphasis in our schools. For example in an area such as oncology, or death and dying, we might logically fit together people who have similar interests and help them to concentrate their efforts in a better way.

Dr. Smith: Relative to our earlier discussions about the proliferation of doctoral programs, someone commented about out-of-State tuition and the problems this creates in allowing students to move between programs. Federal traineeships would go much further if students didn't have to pay out-of-State tuition. If we could develop exchange programs such as those prevailing in the West in medicine, veterinary medicine, and dentistry, we could stretch our money and get more people started on doctoral education.

Ms. Holmquist: In the Committee on Institutional Cooperation consortium of the big 10 universities, there used to be what was called the Traveling Scholar Program. In that program a student could be registered in one university and study in another under the same fee structure.

Dr. Erickson: We had a similar arrangement with three universities in Pittsburgh. The major problem, however, was the tuition.
Dr. Smith: The arrangement with WICHE is that their office serves as broker, and the States give money to WICHE. It is then dispensed to the State receiving the student.
Dr. Gortner: I would like to call your attention to an issue that has not as yet been discussed. What new roles for nurses are emerging which may affect educational programming at the doctoral level? What we had in mind was that eventually the question will be asked as to what in a particular area, be it specialization or practitioner activity, requires additional preparation for research.
Dr. Palmer: I wonder if I might respond by looking at the concept of primary care as an emerging model. We all recognize that the family health nurse practitioner needs considerable work preparation beyond the master's or baccalaureate program. Even when she does have this preparation, she doesn't maintain her skills over a long period of time, and she needs constant updating. In translating this to an emerging need at the doctoral level, we need competent teachers for these newly developing fields. If we want to relate this to research, we need to ascertain what these people do in the health care system that influences the quality of care, the distribution of care, and the health-seeking behavior of the persons to whom they deliver care.
Dr. O'Koren: There is quite a bit of concern about the preparation of administrators for both nursing education and research.
Dr. McPhail: We need to get some value placed on research in service settings. There is some recognition of this need in relationship to criteria measures for evaluating care because of the pressures hospitals are getting, but there are many other problems in the service settings that need to be investigated.
Dr. Pitel: We also need to be focussing upon prevention, but we need to have data to support this thrust. We need to have data indicating cost. For example, if we took a group of coronary patients and worked with them to prevent rehospitalization, we would need to have data comparing this group to others, to determine what our interventions had achieved, and the relative cost of prevention in relation to the cost of rehospitalization.
Dr. Erickson: We have had to demonstrate to the hospital a need for the clinical specialist, the cost of her services, and what she contributes. We demonstrated this with a nurse who worked with children with severe esophageal afterburns. When these children were brought in they always had to be anesthetized. After a clinical specialist had worked in the clinic for 1 year, she had 15 children coming in with no need for anesthetization. When you look

at this from a cost perspective it is easy to demonstrate the saving.

Dr. Leininger: The neonatal area is another focus, as is chronic and acute care for adults and children. The problems in transcultural nursing are another area.

Dr. Gortner: Another area to be discussed is your interest in articulation between programs and acceleration of the educational process.

Sister Bernadette: We need to look at this in terms of economy. If universities would develop programs with continuity from the baccalaureate through the doctoral level we could streamline our programs considerably.

Dr. Elwood: It may be that the student could go straight from the baccalaureate to the doctoral program without an intervening master's.

Dr. O'Koren: How can we really answer the question of what doctoral education in nursing is unless we demonstrate how programs articulate?

Dr. MacPhail: Our doctoral program in nursing is organized so that one could progress with certain stopping off points built into the program. But the whole program is designed with each level based on another. We need to be much more flexible about self-pacing, particularly in light of the number of college graduates from programs of arts and sciences who are coming into our program.

Dr. O'Koren: Previously we were concerned about the quality of doctoral programs.

Dr. Hill: The design you are projecting will make it necessary for us to reexamine our traditional approach to admission to master's programs, where we require experience in a clinical area. It is an interesting approach to talk about, but we either have to build new kinds of things into our master's or doctoral programs or re-think this requirement.

Dr. MacPhail: Many of us have said we don't have that requirement, but in reality there is a discrepancy between what we say and what we sometimes do.

Dr. Erikson: From our experience it is very difficult to build specialization for a student who has just come out of a baccalaureate program.

Ms. Rubin: If you look at the models of microbiology, physiology and similar scientific disciplines you need a doctorate to begin in the field. When you produce a clinical researcher, the person must have some integrating experiences and these can only occur in the clinical practice setting. Persons can only ask good clinical research questions when they have had experience in the actual situation.

Dr. Elwood: It might be that for certain kinds of students with certain kinds of ability and career goals, the pattern of going directly through the educational levels might be the appropriate way, while it may be completely inappropriate for others.

Dr. Palmer: We are getting a new kind of undergraduate student who asks how the baccalaureate program will permit them to take electives so that they will not have to make up deficiencies to enter graduate school. They know exactly what area of study they wish to pursue, and they want to know how our programs of study will allow them to move in these directions.

Dr. Hill: On every college entrance application students are asked to outline career goals and the degree they intend to seek. We need to be aware that students are being encouraged to think in this way.

Dr. Leininger: Master's degree students are also changing. If we are moving into doctoral education, students are going to be very critical of what is in these programs and what they are going to get out of it.

Dr. Jacobi: Am I hearing that we are not sufficiently innovative, that we could not provide under some tutoring, the kind of experience, devoid of rituals, routines, and so on, that would enable the student (in a very short period of time) to get the experiences to move into these specialty areas. It seems to me that the higher the level of education, the shorter the experience needs to be to reinforce the learner.

Dr. Duffey: I am not going to worry about their not getting experience. Without traineeships almost all students are working part time and they get plenty of experience. The job demands, however, are not clinical. One third of the requests for doctorally prepared people that come across my desk are for curriculum developers. Of course, we still have the deans' and chairmen of departments' requests also. The demands that these positions place upon the person is what worries me. It's not that the doctorally prepared nurses cannot grow rapidly, because they can.

Dr. Gortner: We have not addressed as many of the subissues related to the demand for the doctorate as would be helpful. The item just touched upon relates to the practice component. Other concerns are: if you accelerate, what do you lose? Can work-study types of solutions provide an alternative to this? What are alternative educational approaches to the doctorate such as consortia, pooling of resources, exchange of students, and portable scholarships? What are sources of non-Federal funds? What areas might the Division explore to accelerate the discussions begun? Before

moving on to a further discussion of these issues, I thought it would be helpful for Dr. Bourgeois to give you a status report on the Special Nursing Research Fellowship Program and the Nurse-Scientist Graduate Training Program.

Dr. Bourgeois: We now have 87 Nurse Fellows in the Special Nurse Fellowship Program and 73 Nurse-Scientist trainees. Phase-out of the Nurse Research Training Program began January 1973. By 1978 these programs will be completely phased out. When the phaseout was announced, many nurses withdrew from the program. To date, 97 nurses have terminated their fellowship support. Eight of these nurses went into research positions, 47 accepted faculty positions and 19 accepted administrative positions. Many nurses in the process of writing the doctoral dissertation were hired as deans, chairmen of departments, and directors of schools of nursing with the understanding that they would complete doctoral degree requirements. We have supported approximately 815 nurses through the Special Nurse Research Fellowship Program and the Nurse-Scientist Graduate Training Program.

Dr. Phillips: These data give us a good idea of where we are now, but we are very concerned about where we are going, and where we ought to go. We are planning to call a national conference on manpower in nursing in the very near future.

Dr. Leininger: We need to be concerned with (1) how we can set up some kind of a structure to move forward in planning for the future of doctoral programs in nursing, and (2) the need to find ways of improving policy coordination and providing for an analytic review of what is taking place in the whole field of doctoral programs in nursing.

Sister Bernadette: What are we going to push for in the future? We can't be aware of doctoral funds expiring and opportunities to increase the numbers of doctorally prepared nurses being lost and not take some action.

Dr. Pitel: Have we ever approached the Carnegie Commission to look at doctoral education in nursing? Sometimes reports such as these have great impact on our colleagues.

Dr. Courtney: We really need to identify some catalytic unit that will help nursing decide exactly where it wants to go, so that we may speak with more unity.

If the Division of Nursing could be the catalyst in getting a group comparable to this one together, that might be one answer.

Dr. Jacobi: The recently established Academy might be one group. But diversity certainly has been the strength of American education, and I think in nursing we try too hard to get uniformity.

Dr. Leininger: I wonder if we could follow through on the idea of

the ANA Council of Nurse Researchers' giving us some guidance for the development of doctoral and postdoctoral areas.

We could get some representation on the Council of Graduate Education. The American Council on Education is working on quality aspects and is setting up guidelines that might help. New programs that are developing would have some kind of guide so that strength can be built in.

Dr. Bourgeois: We do need some direction here. We have a new group of students seeking fellowship support to go on for doctoral study. They are much younger. The average age is 24–25 years. Within the last 5 years we have seen a very young, dynamic nurse who is ready to go on for doctoral study. We have a group of young people who are receiving counseling from doctorally prepared faculty members who are role models for the young nurses. Many of the nurses seeking fellowship support for doctoral study have a background as clinical practitioners. This raises many questions. Why do they have a felt need to go on for doctoral study? The majority of them have identified a research problem before they enter doctoral study, and invariably it is related to their clinical experience as a clinical practitioner.

Dr. Krueger: When we meet with people outside our department, they emphasize that we should not be running a rescue program. We should be doing long-range planning for young people who are developing their careers. Our programs should not be geared to retreat or to the rescue of some of the older nurses.

Dr. Gortner: We need to go back to Dr. Leininger's plea for some decision or intended action toward structuring an organization with the objective of current and progressive planning and coordination for doctoral education in nursing nationally. We have deliberately included the Executive Directors of the ANA and the NLN, the Past President of the AACN, and the Director of the ANF, because these are issues critical to those organizations as well as to the Division of Nursing, which to some extent can take a catalytic and coordinating role, but cannot and should not proclaim policy on issues that deal with critical areas such as doctoral education. These are properly the province of the universities and those most knowledgeable about doctoral education.

Mrs. Walsh: We have a meeting of the three organizations once every 2 months. This is something we could work toward to bring some kind of coordination.

Dr. MacPhail: You mentioned the Commission on Education, I wondered about the Commission on Nursing Research, and the Council of Nurse Researchers. There you have a body with advanced preparation.

Dr. Jacobi: There is a meeting of the chairmen of these groups in the near future and we could discuss this. In our legislative plans, certainly, we have to think of education, research, services, and practice.

Dr. Gortner: Sister Bernadette suggested that those experienced in doctoral education might come together with those who are contemplating establishing the doctorate in some type of future conference. There might be a need for a number of conferences that deal with substantive issues, not necessarily policy, but operational and developmental issues of doctoral education.

Sister Bernadette: One of the things that the ANA and the AACN are doing collaboratively is a study of the cost of graduate education, using some of the data from the study of the Institute of Medicine of the National Academy of Science.

Dr. Gortner: I wonder if the group of major agencies that will be meeting shortly might address the problem of a national inventory or clearinghouse for nurses with doctorates in relationship to the needs for doctorally prepared nurses. I know of ANF's long-standing interest in a national clearinghouse for nursing research. Somewhere a clearinghouse for nurse researchers should be brought into reality. If we do move into a conference group on manpower, we will be better able to make projections on a logical basis with a sound rationale.

I wonder if there are some highlights about your Nurse-Scientist Graduate Training Programs that you each would like to comment upon for the benefit of the group.

Dr. Krueger: We currently have 11 Nurse-Scientist trainees who are being phased out. Three graduated last year and the rest will be phased out in the next few years. We have 17 other students who are on Army, NIMH individual scholarships, or are going on their own. So we have about 28 students in doctoral study. I am surprised at the number of these students who have come out of nursing service rather than education. They come to us with baccalaureate degrees. We are receiving a large number of inquiries. In 1972 we had 51, in 1973, 67, and in the first 6 weeks of this year 13. As for requests for doctorally prepared nurses, in 1972 we received 15, last year, 26, and already this year 17. Originally they were mostly for deans or directors, administrators, or curriculum experts. But now the requests are for nursing service, research, and teaching and research combinations.

Dr. Anderson: Half of our Nurse-Scientist trainees come from teaching positions. If they come from diploma schools they shift into university schools when they finish. Our shift toward the doctorate in nursing elicited a tremendous number of inquiries—

about a hundred a year. We are getting inquiries from master's students instead of baccalaureate students, as was the case 10 years ago.

Dr. Courtney: Most of our Nurse-Scientist trainees had their master's degrees and were in teaching positions. One or two were in some kind of community health agency before coming into the program. We have had three graduates. One is at the University of Minnesota. She is in the process of developing research activities there. The other two were employed in our college of nursing. One of them is Associate Head of the department of general nursing. Another of our graduates is a faculty member in medical-surgical nursing. All three of these nurses studied physiology, and we are trying to get this group together to do some research. Another of our graduates is a faculty member in medical-surgical nursing. We currently have seven Nurse-Scientist trainees in our program, five of whom are in physiology and two of whom are in anatomy.

Dr. Crowley: We have about 34 students in full-time doctoral study. We have one that is in the school of medicine, a former graduate student in nursing. At the present time we have seven Nurse-Scientist students, four in sociology, one in anthropology, and one in physiology. Another is in the independent program. We have 15 students who were on Nurse-Scientist Grants who terminated before finishing the Ph.D. Three of these are working on their dissertations, two are matriculated on a part-time basis, and one is with the Children's Bureau. Six have been awarded the Ph.D. and all have gone into university settings. Two terminated with the master's degree, one went into a university setting, and the other into a community health agency. Eight students are currently enrolled under special fellowships. One of these terminated prior to completion of the Ph.D. and ten have been awarded Ph.D.'s. NIMH fellowship support has also been an important source of help for us. Five students are currently enrolled. One terminated before completion of the Ph.D., but she is currently supporting herself and completing the program. Three have been awarded Ph.D.'s.

In 1973 we had 41 applicants, 30 of these were for nursing science, 3 were for education, 6 for psychology, 1 for epidemiology, and 1 for gerontology.

Five students are on NIMH support, one has Fullbright support, one is supported by the Navy, two are teaching assistants, and one is on educational leave from Public Health Service. Seven are independently supported, and one is supported by the Rockefeller Foundation.

One of the things that does concern me is that many of the

students are prone to think in terms of the field that would allow them to finish first, and usually this is education. They then say that they could get other work in a cognate discipline, or additional work when they have finished their doctorate. I think it is really unfortunate to go into study in education if that is not your burning interest and you do so only because of expediency.

Our independent Ph.D. program has attracted quite a number that would certainly go into a nursing doctorate if we had it.

Dr. Leininger: The individual Ph.D.'s are very exciting. You usually have to integrate three disciplines. Students are accepted into this program only if they are exceptional students.

Dr. Mitsunaga: We have had a total of 15 Nurse-Scientist trainees in our program which opened in 1967. Four are graduated, and two resigned from the program. They are continuing to write their dissertations now while working full time. Three resigned altogether and one is on leave as a Fullbright fellow studying in England. Five are currently enrolled. Of the others supported by NIMH traineeships and fellowships, the University of Colorado has graduated seven, and the University of Denver four. There has been one resignation. Currently seven are enrolled at Colorado and two at Denver. We have four or five unfunded students. Since September we have had 171 inquiries. Forty-three were inquiries about nursing and 65 were about specific disciplines.

Dr. Hagen: Of the 17 nurses who came into our Nurse-Scientist Program only 5 have had experience in teaching. Of the 17, we lost 3 from the program, one of whom is getting her degree, but part time. Three have completed their degrees, all of whom have gone into university settings. Five are about to finish. One of my concerns is that many of these graduates go into academic settings that are so overwhelming that the research capabilities they have developed are not going to be used wisely.

Dr. Duffy: We have had 11 graduates. None of them went into administration; all went into university positions. Four students are in the dissertation stage now. Five others will complete doctoral requirements in 1976.

CONFERENCE SUMMARY

Marie J. Bourgeois, R.N., Ph.D.

A major agreement of the group centered upon the need for a National Planning Conference. The Planning Conference should include representatives from schools of nursing that have experience in the administration and development of curricula for doctoral programs in nursing, as well as schools of nursing who are planning or implementing new doctoral programs in nursing. Although the recommendation did not specifically include those nurses with experience in the administration and interdisciplinary process involved in the Nurse-Scientist Graduate Training Grant Programs which provided doctoral education in disciplines related to nursing, it is clear their experience would be valuable. The Planning Conference would bring the appropriate individuals together and provide a forum for further discussion and planning.

Specific recommendations advanced in the group discussion include:

(1) Nursing should aim to obtain university support for doctoral education for nurses. To ilicit such support, the need for doctoral preparation of deans and department heads, as well as demonstrating the outcomes of nursing research and its role in reducing the cost of health care delivery while increasing markedly the quality of care, were examples that might be offered. The educating of significant others outside of nursing concerning the outcomes of doctoral preparation for nurses is essential if this support is to be forthcoming. The educating of individuals should include those in the medical setting, those in health care facilities in community settings, consumers, and the entire population of the nursing profession, especially student nurses at all levels.

University support and encouragement of doctoral education for nurses in nursing, as conceptualized by the participants, may lead to a complex and comprehensive structure, such as a nursing research institute. The nursing research institute firmly established as an integral component of the university setting would have valuable outcomes for nursing. First, the nursing research institute staffed with nurse researchers and others could take the lead in developing the theoretical bases of nursing science, transfer this into the clinical practice or service aspect of nursing, and use it in the foundational educational processes of nursing. Demonstra-

tion of the improvement of patient care resulting from the application of nursing research would be a desired outcome. Through the development of nursing research institutes, areas of excellence in nursing research could easily be identified and the values communicated to the larger professional and lay communities. Through this form of organization nursing problems related to service, practice, and education could be addressed in a concerted research effort.

Further, direct linkage between the research institute and practice settings would move nurse researchers easily from the world of academia to the action oriented world of patient care in the community and in the institution. Nurse researchers and clinical practitioners in patient care settings could communicate and collaborate with their colleagues more readily.

To develop such reservoirs of nursing research, nursing needs to intensify its efforts in identifying beginning clusters of nursing research, their location, and those involved in producing the research. If these centers were developed, portable student fellowships would allow for students to come to these centers as part of their doctoral program. It is expedient for nursing to determine institutional resources, capability of the faculty, research interests, ongoing research and areas of study available in the clinical fields. This information would lay the foundation for the development of an institutional fellowship program.

In such a setting students would be exposed to outstanding preceptors and research scholars who would provide an opportunity for predoctoral and postdoctoral work in certain fields where nursing research is beginning to advance. Some beginning examples of this type of organization were offered. Appropriate organized nursing groups would be helpful in making known key research areas.

It appears that nursing has the capability of developing its own predoctoral and postdoctoral research areas and fostering the development of institute fellowship programs. This level of sophistication will be less difficult to attain when we have more nurses prepared at the doctoral level.

An additional outcome of university support of doctoral programs in nursing involves interdisciplinary research as a means of enlarging the nursing doctoral students' command of health-related research. Many nurse-scientist trainees have been involved in interdisciplinary research. For instance, in an area such as pain, oncology or dying, it would be appropriate to bring together nurses, behavioral scientists, and others who have similar interests to concentrate their research efforts. Through these approaches,

nursing could clearly demonstrate the value of their research endeavors as well as the need for support for doctoral education in nursing.

(2) Definition of goals and communication of these goals to the nursing profession is needed. Since doctorally prepared nurses influence and enrich all aspects of the nursing profession—education, service and research—it is clearly evident that the total nursing population should be informed of the major goals of doctoral education for nurses, including short-, middle-, and long-range goals. Plans for producing the appropriate manpower to achieve these goals and what this number of doctorally prepared nurses might contribute to the profession needs to be clearly communicated. Further, the profession needs to be familiar with the (a) structure; (b) scope; (c) cost; (d) qualitative and quantitative characteristics of doctoral programs for nurses; (e) interrelationships of doctoral programs with baccalaureate and master's degree programs; and (f) the nature of interdisciplinary relationships with doctoral programs in related disciplines in which nurses have received or are receiving their doctoral preparation.

When the nursing population has a strong informational basis concerning all aspects of doctoral education for nurses, they may more readily lend their support to the development of doctoral education in nursing. By spelling out the diverse contributions doctorally prepared nurses might make in all areas—education, service, and practice—other nurses might more readily understand the development of doctoral programs in nursing.

(3) Coordination of planning for doctoral programs in nursing is needed. Concern for what appears to be a mushrooming of doctoral programs in nursing without benefit of regional and/or national planning for coordination was expressed. It was considered judicious for nursing to exercise caution in preventing a proliferation of doctoral programs in nursing through monitoring and developing a national plan for coordination. The lack of extensive, systematically collected data about the existing body of doctorally prepared nurses and how and where they are functioning in the profession, coupled with a lack of information concerning the kind and distribution of doctoral programs, makes the need for the National Planning Conference recommended by the participants an urgent one.

PART II

CONFERENCE ON DOCTORAL MANPOWER IN NURSING

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June 19-21, 1974
Silver Spring, Maryland

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INTRODUCTION

The Conference on Doctoral Manpower in Nursing began with the presentation of two formal papers. The first of these was presented by Mr. Frank Newman, director of the Task Force on Higher Education which produced the *Report on Higher Education: The Federal Role*, generally referred to as the "Newman Report".[1] Mr. Newman addressed the projection of doctoral requirements from the perspective of his study.

Dr. Eleanor Lambertsen, presenter of the second formal paper, addressed the implications of the Task Force report for projecting doctoral manpower requirements in nursing.

For purposes of orienting the reader to the Task Force report, certain of the recommendations made by that group have been paraphrased and are presented here.

The Task Force recommended that

1. The bulk of Federal fellowships should be distributed directly to students on the basis of intellectual and creative promise.
   a. The level of an individual's fellowship support should be substantial.
   b. Each portable graduate fellowship should be accompanied by a companion grant to the institution the student selects.
   c. Both fellowship stipends and companion grants should be time-limited.
   d. The main criteria for admission should include demonstrated motivation: a goal-oriented aspiration to graduate study evidenced by willingness to take initiative and set standards for one's self and by independent accomplishments in nonclassroom as well as classroom activities.
2. Fellowship holders should have to rely on their own resources to meet a significant share of their costs. Those fellowship holders who do not have family resources would therefore need jobs or loans. There should be increased use of Federal work-study funds for graduate students, conditional, in the case of each university, on the establishment of an effective program of on- and off-campus jobs.

[1] The final report of the Task Force was published by the *M.I.T. Press, Cambridge, Massachusetts*, in 1973, under the title *The Second Newman Report: National Policy and Higher Education*.

3. A new rationale for a Federal role in graduate education lies in the need for reforms which will improve the quality of educated manpower. The following uses of project grants would be expressive of such a new rationale:
   a. Grants to promote versatility in Ph.D. and equivalent training. An example of this kind of program would be one that required participation in a major off-campus project before the dissertation.
   b. Grants to restructure and revitalize professional schools. Much as the Federal Government had a vital concern with the quality of science education in the 1960's, so it should now concentrate on schools training those who will be trying to solve our major social problems.
   c. Grants for internship programs. Federal grants to fund new internship programs would help to develop new models of sequential learning.

PROJECTING DOCTORAL MANPOWER REQUIREMENTS: A LOOK AT THE CRITERIA

Mr. Frank Newman

In discussing requirements for doctoral programs in nursing it might be useful to start with the general problem of doctoral manpower and then move to the particular problem of doctoral programs in nursing. In 25 short years we have traversed an enormous distance in doctoral manpower in this country. We've gone from what was widely discussed as a manpower shortage to what is equally widely discussed as a Ph.D. "glut." In the early postwar years at the end of the 1940's, we were awarding in the neighborhood of 4,000 doctorates annually. By 1970 the annual total had exceeded 30,000. Thus the number of doctorates granted had grown seven fold—almost twice the growth in bachelor degrees. The number of universities that were significant producers of Ph.D.'s doubled—from approximately 150 to about 300. Scholars in the field predicted that by 1980, 60,000 to 75,000 people would annually meet doctoral requirements.

But actually, the sharp growth pattern in doctoral education has leveled off. Many, if not most graduate institutions have cut back either their doctoral enrollment, the number of programs leading to a doctorate, or both. These cutbacks are not a result of the kind of conscious manpower planning that is so often a subject of discussion, but rather of certain perceptions among the front line actors in the academic marketplace. Students perceive that there are not enough of the hoped for jobs at the end of that long tunnel; the administrators perceive that there are not enough dollars to fund all of the existing programs of doctoral preparation.

Why did doctoral education grow so rapidly? Within academia there are sizeable political and emotional factors affecting decisions to create and then finally to stop creating new Ph.D. and other programs at the doctoral level. On a great many campuses there are hard-fought battles over financial resources. One would assume that in a university these issues and differences would be resolved by rational discussion. But it is always difficult to be rational when human factors are involved, at least when *our* human factors are involved. Why, for example, have the number of doctorates in modern languages or English grown more rapidly than in medicine? Why have so many institutions that obviously

lacked the essential fiscal or academic resources pressed on to Ph.D. programs? These questions are merely reminders to us that as academicians we often make decisions on the same irrational and personal bases as does the rest of the world.

If I were to attempt the difficult art of predicting what's going to happen with doctorate production it would go something like this: Rates of degree granting probably will continue at approximately the present rate. Although on the one hand, there is a clear trend toward elimination of the weaker programs and there is also a trend for students to recognize the limitations of the Ph.D. job market; on the other hand, there are factors pushing up enrollments. There is a continuing trend for students to seek the highest possible credential. There is also a trend toward the broad spread of doctorates of all types in all fields of employment. Traditionally, a little over half of students getting their doctorates have gone into academic employment, but this proportion has begun to decline as Ph.D.'s in many fields spread out across the employment picture.

When we speak to nursing, however, it is important to recognize that the growth curve of nursing enrollments at all levels is dissimilar to the enrollment curve in other disciplines. It starts somewhat later and continues to grow well after enrollments in most fields have leveled. Only recently have doctoral programs in nursing been developed and become visible.

And besides, a health care discipline always seems to be in a special category. The education of nurses, particularly at the graduate level, often takes place in a medical school complex, and as we all know, nothing involving medical schools follows the rules for the rest of academic life. So when it comes to manpower planning or the criteria that we might use relative to nursing doctorates, we must anticipate a degree of specialness.

First, let me raise some issues concerning criteria for doctoral programs and then some issues about what was once called manpower planning. They are related.

The nature of the criteria for a degree program has relation to the number of graduates that can be rationally absorbed by society. The resolution of the question of criteria is one of the most difficult social aspects of educational planning. In my opinion graduate education, particularly at the doctoral level, is career training, whether we are talking about the most esoteric Ph.D. in Classics or the most professional degree such as an M.D. Graduate education is specialized training to prepare someone for a particular career—a scholar, a surgeon, a chemical engineer. Yet, in the case of nursing, undergraduate education as well may provide

specialized or professional training. Many educators, including myself, perceive that a 4-year program of undergraduate education, whether it be in liberal arts, in nursing, in business, or in engineering, must be equated with general training. After all, many nurses go on to careers which may or may not be related to nursing. On the other hand, 5 or 6, or 7 years of intensive, expensive, and specialized doctoral training, should be preparatory to a specialized career.

If such is the case, then the criteria for entry into and graduation from the specialized program should have some bearing on career performance. What have been the criteria for doctoral programs to date? Criteria for entry have related primarily to grades and test scores, and, to a lesser degree, letters of recommendation. They have relation to performance on the graduate record exam (GRE) or, for the medical field, the Medical College Admissions Test (MCAT). When the pressure for admission is high, as it is with medical schools and many Ph.D. programs today, the tendency is to require higher and higher grade point averages and test scores. As doctoral programs in nursing become more available, you can expect the same thing will happen in nursing, unless something is done to prevent it.

However, the remarkable thing is that these measures or criteria have little or no relationship to successful performance in a chosen field. Hoyt, McClelland, and other scolars have studied this matter, and the evidence seems to be fairly uniform. There even appears to be little relationship between grades and test scores and performance. Even among researchers and scholars, who it might seem would be closely concerned with grades and test scores, there appears to be little relationship between academic records and career performance.

Why then do people use these measures? They have a seeming objectivity, are within easy reach, and they do predict performance in graduate school.

Many academicians argue that these are appropriate criteria for admission to graduate school since there is no point to admitting a student who can't do the work. But of course this is a circular type of reasoning. By admitting students on the basis that they appear academically acceptable, we hinder curriculum reform and educational change to really meet the needs of instructional students.

The current state of the pre-med, grade-grubbing race going on in American undergraduate colleges is a case in point. A recent study showed that approximately 75 percent of the Yale freshman were interested in gaining entrance to medical or law school,

and that they were largely motivated by the high incomes associated with these two fields. The student is driven to spend 4 years getting high grades in order to get into medical school, then to get through medical school, so as to make a great deal of money. Financial reward has little relationship to either the widely heralded liberalizing influence of 4 years of undergraduate education or to the humane, effective practice of medicine, which is the avowed purpose of 6 or 7 years of medical education.

Coming back to nursing, my guess is if doctoral programs in this field become more generally available, there will be strong competition for admission. This means that it will be necessary to define who are the most qualified, and what "qualified" means. If grades and test scores (past a certain minimum level) do not indicate who is the most qualified, what does?

There are some measures that might be considered, such as research capability and interest or, in other words, evidence that a Ph.D. candidate has generated a research project and achieved useful research results. Seldom is a Ph.D. candidate asked for such evidence. It was never asked of me at my entry into a Ph.D. program. Few Ph.D. candidates, despite their ability to garner A's in class, have the capacity for self-generated research. A study done several years ago indicated that only 15 percent of the people who held doctorates ever published anything beyond their dissertation.

There is also the question of motivation, but motivation is difficult to measure and beyond that, it is necessary to define what kind of motivation should be expected of a university student. What about the motivation of Yale freshman, for example? Surely we would prefer an orientation toward human service as a part of their motivation, but how can it be measured?

One approach has been to expect evidence of participation in various human service programs or projects. Most students have had the chance to demonstrate that type of interest one way or another. There are a number of successful fellowship programs that demand exactly that kind of evidence—Rhodes, Danforth, Kent, or the White House Fellows. Yet, when I have recommended this approach to a number of professional societies, the response has generally been negative. Someone usually responds that such a screening method works well only with a small number of applicants, and only if schools do not have to worry about the costs of student selection, the process of selecting Rhodes Scholars or White House Fellows being very expensive.

I think this is an irrational argument. We go to great trouble and expense to educate doctoral students. Many programs

in the country select hardly one out of fifteen or twenty applicants. I can't believe that care in such selection would not pay off in a very large way, particularly in light of the high attrition rates which are due not to students' lack of ability, but rather to their lack of sustained interest.

Another approach might be the use of pre-internships much like the military academies have had for years. Students might be asked to come into the college 6 months in advance of the beginning of their studies to work in a nearby clinic or a particular outreach program. The willingness to participate in such programs is usually a sign of the right type of interest and motivation.

Probably most useful would be an evaluation of the student's external experience. How well, for example, has the student performed on the job as a nurse? There will, of course, be an increasing danger that as an oversupply of nurses begins to manifest itself, students will undertake extended study to obtain the highest possible credential for career employment. When jobs are plentiful, students may wish to take a 2-year degree, then work for a while, then come back for a 4-year degree, then work again for a while, and then return to school for an M.A. But when jobs are scarce and an oversupply seems imminent, some students are tempted to insure their marketability by remaining in continuous study to get a doctorate, and then to study at post-doctorate and post-post-doctorate levels. Another virture of measuring student motivation through job performance and external experience is that it encourages careful consideration and selection of the student.

There are some other choices and considerations which influence the nature of student participation in graduate study. Is it best to provide fellowships, loans, or work opportunities? My own strong sense is that at the doctoral level we ought to count on a great deal of work-study opportunity in one form or another—research assistantship, teaching assistantships, internships, etc.

As there is a growing pressure in our national discussions for rational planning of manpower, let me turn to the question of manpower planning and its relationship to supply and demand. It is unlikely that we as a nation can achieve anything like the accuracy necessary for matching the supply of various types of college graduates with the demands for their services. The Swedes, with their much smaller country and long tradition of sustained planning, have been unable to do this. Even the Russians—having types of controls we would not countenance in this country, such as the ability to assign graduates to specific jobs—have hardly been modestly successful.

In this country there are a number of factors that make such

detailed planning almost impossible. To begin with, there are 50 States, and even if one could gain the cooperation of all 49, I can assure you that Rhode Island would be interested in taking another direction. For another thing, many of the most important doctoral granting institutions are private, and their planning activities are uncoordinated. In addition, the Federal Government, we should remember, is not one but many governments. What happens within HEW is hard enough to coordinate but often differs substantially from what is happening in the Department of Labor, or Commerce, or the National Science Foundation.

To date, the track record for the Federal Government in manpower planning hardly leads one to expect future success. Take, for example, two fields in which the Federal Government has made a determined attempt to predict the nature of manpower needs: engineering and education. In engineering, the relevant Federal agencies predicted shortages right up until the very time that unemployment among engineers was at its peak. Then, well into the time that new shortages appeared, Federal predictions stressed oversupply. Until about a year ago, the Office of Education was pushing for added teacher training funds even though we had arrived at the point where there were approximately twice as many students graduating with teaching credentials as there were job openings. And certainly in the field of medicine, HEW's recent pronouncements seem to be far more motivated by politics than a careful review of the statistics.

The track record of the universities is as bad. For a considerable number of years, the mounting evidence that we were heading toward an oversupply of Ph.D.'s led to the following types of arguments:

- We should decrease the student-to-faculty ratio in spite of the fact that shortage of resources to support higher education has in fact led to an increase in the student-to-faculty ratio.
- We should increase the number of Ph.D.'s teaching in the community colleges despite the evidence that a research-based degree may not be the most appropriate for a community college teacher.
- Ph.D.'s should be moved into occupations for which they had not specifically prepared, journalism often being mentioned as an occupation for English Ph.D.'s, although their training seems almost antithetical to training in journalism.
- The Federal Government should greatly increase funding for research and development in order to employ Ph.D. graduates.

Although Ph.D. training is not very general, and despite the fact that Ph.D. candidates have already had 17 years of general training, Ph.D. study is desirable general training.

The Task Force on Higher Education argued that the function of manpower planning for both Federal and State policy should be to encourage a "reasonable relationship" of graduate programs to the opportunities for jobs. In other words, if we see an area where there seems to be shortage (such as in M.D. training at the present) Federal incentives should encourage expansion. If there seems to be an area of broad oversupply (teaching today might be an example) Federal incentives should not encourage further expansion; instead, some modest incentives to reduce programs might be in order.

We also proposed that some doctoral programs—not all—reach for broader focus. Since a growing number of doctoral graduates are in fields other than academic employment, a broader focus might well prove useful.

We have recommended that as far as possible a recurrent pattern of education be encouraged. When nurses make preparation to return to the classroom for doctoral study, their motivation is likely to be very real. They know the field of nursing, and they know that the advanced degree can result in personal advancement. They are not being lured into a situation in which it is hard to get a start despite long specialized training.

And we in the Task Force recommended that the best criteria for matching students to academic programs—both in terms of the numbers of students who should apply, and the types of students who should apply—have relation to self-selection. The more the student knows about his or her prospects in the field, the requirements of the field, and the likelihood of getting a job, the better will be the student's own self-selection.

There are two final things that are worth saying regarding doctoral programs in nursing. They are peculiar to this field and this field alone. The first is that the most obvious but generally ignored quality essential in nursing education is an orientation to and capacity for human service. I can think of no other profession that has such a high demand for this capacity. I have tried above to suggest a few ways to think about this requirement, because little research, little interest, little energy has been devoted to determining how this capacity can be selected and enhanced. I believe much more effort must be applied not only to enhancing the essential intellectual and professional skills of nurses, but the absolutely central skills of human service.

The last point is that nurses must play a new and more pivotal

role in health care delivery. We know that medical practice must change, that we cannot continue with its current inefficiencies, or the current mode of M.D. self-orientation. Medical change will require new attitudes on the part of both M.D.'s and nurses. As doctoral programs are developed in the field of nursing, it is essential that they prepare nurses to stand up to doctors and to see themselves as central to the process of health care and to the process of American medicine.

I am fully aware that the emphasis of this conference is on identifying appropriate criteria that will result in meaningful predictions of numerical need, but I cannot support the premise that we can ignore the crucial questions of direction and quality of doctoral preparation. I do not intend to imply that we should continue the debate evident in the published report of the Conference on Future Directions of Doctoral Education for Nurses sponsored by the Division of Nursing (HEW) in January 1971. But some semblance of direction and quality control is inherent in the charge of "meaningful predictions."

The question of doctoral manpower for nursing is not theoretical; blunt realism is essential to our deliberations. The question is one that affects Federal and State appropriations, the potentiality of a "second system" of accreditation instituted by State and Federal governments to validate minimal standards of institutional stability and integrity, university decisions on the establishment or continuation of programs, and the career choices of potential students.

We have all been guilty of a pristine kind of elitism in our overall points of view about doctoral education for nursing, but today's world requires an orientation to a different set of social conditions, pluralistic motivations, and technological conditions. I do not perceive nursing as an isolated phenomenon struggling for survival in a totally hostile world. It has always been difficult to separate nursing as a profession from the problems, policies, and commitments of the wide variety of organizations in which nurses practice. But recent social and technological changes have forced changes in other professions; changes similar to those nurses are attempting to bring about in their own field. "Their changes include changes in work settings, changes in clients, substantial modification in professional role, and changes in the disciplinary bases upon which professional education and professional practice are based." [1] As increasing numbers of professionals become employees, the problems become more similar to those of nurses.

[1] Edgar H. Schein, "*Professional Education*: Some New Directions" in the *Carnegie Commission on Higher Education* by Lewis B. Mayhew. San Francisco: Jossey-Bass, Inc. 1973, p. 303.

These newer settings affect seriously the way the professional individual functions. A professional scientist working for a corporation may be caught in a conflict between elegance of solution to a problem (his own professional need) quality of product (the needs of the ultimate consumer), and considerations of cost and speed of production (the needs of his employer).[2]

[2] Ibid., p. 304.

PROJECTING DOCTORAL MANPOWER REQUIREMENTS IN NURSING: A LOOK AT THE CRITERIA

Eleanor C. Lambertson, R.N., Ed.D.

Introduction

This particular conference is one of the most critical to be planned at the Federal level. Quite bluntly, we have the mission, collectively, to gather the hard and soft data for a statement on doctoral manpower requirements for nursing that can be marketable. I did my homework in preparation for my presentation; I conducted a rather systematic search of the literature, policy statements, pronouncements, etc., but my search was far from conclusive. Perhaps one of my problems is that I was searching for some unifying set of assumptions relative to the social significance of the outcomes of doctoral education for a select group of nurses. This is not intended as a criticism but rather an expression of my faith that, somehow in the 4 years I have been divorced from direct experience with programs of doctoral study, my colleagues would have resolved the issues.

This example can be replicated in numerous employment situations where highly trained professionals practice as employees: the university, a service agency, government, associations, work, etc.

There are socially recognized demands for highly trained manpower in nursing, but if nursing follows the pattern of other professionals prepared at the doctoral level, the predominate base of employment will be the university or academic health center; note I said *base* of employment. I assume that the various roles for nurses will continue to require a mix of competence in research and practice as well as, in the majority of instances, teaching of graduate students. The percentage of mix may vary for individuals, but the mix is critical to the profile of the product we are attempting to interpret.

Current Situation in Doctoral Education

There is little consensus within nursing, as is true in most academic and professional disciplines, on the appropriate doctoral degree for the profession. But for the outcomes of this conference I am further assuming that the current pluralistic approach is ap-

propriate. Existing resources for education of doctoral manpower must be critiqued and related to meaningful predictions of numerical need.

The four types of doctoral programs currently available to nurses are:

1. Doctoral degrees in nursing arts or nursing science denoting preparation for scholarly nursing practice;
2. The Ph.D. degree in nursing denoting preparation for research and theory development exclusively in nursing;
3. Professional or research degrees in relevant fields of practice such as health care administration, education and systems operation research;
4. Ph.D. degrees in disciplines relvant to nursing.

Approaches to Estimating Requirements

One approach to estimating needs for manpower is the conventional supply demand analysis. In this conference, supply is an open question with demand analysis the primary focus. I have used the assumptions of the National Science Foundation for demands for scientists and engineers inherent in the program planned for this conference;[2]

1. An increase in graduate undergraduate faculty (B.S. only) in proportion to a projected growth of enrollments, with the doctoral share of faculty rising at "judgmental" rates.
2. Future employment of doctorates at some academic research and development (R & D) jobs equal to the ratio of expected R & D, taken as a constant share of GNP, to the cost of R & D per worker, based on a weighted trend projection of growth of costs.
3. A growth of nonacademic, non- R & D jobs at 1964–74 rates of change.
4. Estimated growth of demand for new doctorates due to death or retirement based on historic death and working life tables.[3]

The demand approach to estimating requirements needs to be oriented to needs of society, not to prospective demand as measured by cold economic analysis. Needs include established as well as unrecognized and unmet figures. I found the following comments of Kidd quite provoking:

[1] Report of a Conference, *Future Directions of Doctoral Education for Nurses*, Bureau of Health Manpower Education, Division of Nursing, September 1971, p. 16.

[2] I edited the assumptions to reflect an adaption to nursing.

[3] Charles V. Kidd, "Doctorate Output: Overproduction or Underconsumption?" in *Future in the Making: Current Issues in Higher Education*, edited by Dykman W. Vermilye. San Francisco: Jossey-Bass, Inc. 1970, p. 42.

> To the extent that people believe manpower forecasts and act upon them, the forecasts are doomed to error unless those who make them predict the effects of their own forecasts. The more widely the forecasts are published the greater the extent to which they become an active factor influencing the trend of events.[4]

The Criteria

Professions have always been the agents through which society dealt with major problems. My initial comment in this presentation was that this was one of the most critical conferences to be planned at the Federal level. Doctoral manpower in nursing, not just for research, implied to me a shift in emphasis. Did the change imply a shift in responsible leadership, that the responsibility as agents for social change in nursing might shift purposely from the baccalaureate level to the doctoral level? Our public quarrels have perpetuated the myth that problems associated with quality of nursing care can be resolved through a complete shift to baccalaureate education. If you doubt my analysis, review the pronouncements of our organizations, testimony for legislative hearings, and the nursing literature in general. We have talked to ourselves about graduate education. Perhaps at this point in my presentation you are restless and resentful. But I have been restless and resentful for the past several weeks. I accepted this assignment blithely. I read and reread the *Report on Higher Education: the Federal Role* and each time as I attempted to "look" at the criteria, within the general context of nursing, I became less able to cope with my assignment. Within the context of the Division of Nursing I have long been a supporter of creative federalism. But how creative could one be with the direct and righteous criteria? Could one, at the level of doctoral education for nurses, suggest that there were implicit differences that must be considered for the profession of nursing? Would any interpretation of the significance of these criteria for nursing be perceived by significant others that nursing did not have the potential to meet generally acceptable standards for doctoral status? As usual I found solace through my selective reading.

I have a penchant for collecting impertinent sentences that support my premises at given points of time. In an article, "The Anatomy of Fear," in the June 16, 1974 *New York Times Magazine*, I was impressed with this statement:

> Perhaps the next best thing to being master of one's fate is being deluded into thinking that one is.

[4] Ibid., p. 44.

The fate of nursing depends upon our ability to focus upon the distinctive mission of doctoral education for nurses and clearly express the specific nature of criteria which will facilitate achievement of mission-oriented goals. My "look at the criteria" can only purport to be a facilitating process for the pointed deliberations of this group.

The criteria identified in the reference—*Report on Higher Education: the Federal Role* represents criteria to encourage, reform and respond to social needs for doctoral manpower. My critique is limited to the appropriateness of these criteria for insuring a source of doctoral manpower in nursing. Applying the criteria to institutional, academic and extra-institutional requirements is considered in three separate presentations.

The bulk of Federal fellowships should be distributed directly to the students on the basis of intellectual and creative promise.

Certainly, empirical evidence would support nurse educators' goals for stringent selectivity of candidates for admission to programs of doctoral study.

The pool of potential recruits is growing as a result of the character and number of qualified graduates from baccalaureate programs. A trend of interest is that of the increasing number of candidates seeking admission to nursing programs following completion of a baccalaureate degree in another major. This career motivated group represents a selective source of talent that may well be chosen for orientation to doctoral study.

Federal fellowships distributed directly to students would not appear to be controversial. But the rationale is oriented to established traditional programs of study. How can the interests of potential graduate students of nursing be substantially congruent to the national interest in reform when political, professional, and social pronouncements of reform for health services are all too frequently antithetical and are daily debated in the public media? Except for references to physicians, there is rarely the slightest reference to any potential for significant others of the health disciplines with doctoral preparation.

Federal fellowships should not be tied either to particular fields or institutions.

The qualifying statement "that those fellowship programs justified by the mission of a particular agency (such as those of NIH) could continue to be tied to particular fields, but still be free of ties to particular institutions" is of significance for nursing. Posi-

tions of organized nursing and independent voices of leaders in nursing indicate that specific funding sources for nursing are essential. Certainly this group is well aware of the prior rationale for separate legislation. The situation has not changed. In the arena of doctoral education at the university level, support for nurses has been predominantly from Federal funds. There are limited resources available within most university nursing programs for supporting graduate students through research assistantships, and these opportunities have further decreased with curtailment of funding resources for research. Withdrawal of specific funding of graduate studies in nursing at this time could adversely affect the continuation of some recent and innovative programs of doctoral study. There has not been time for these programs to achieve full assimilation within the support structure of the parent university.

Each portable graduate fellowship should be accompanied by a companion grant to the institution the student selects.

The all too brief victory of the capitation support for instructional costs and program innovation warrants a critical appraisal of the rationale for this criterion. While the companion grant to the institution is to be applauded, I view with alarm a potential problem which is that such monies might be turned over to the general funds of the university and would be lost to nursing education, per se. The issue of the intent of support of institutional overhead or support of instructional costs is not an either/or question. Nursing educators have argued the cause of program support throughout the history of nursing legislation. The posture remains that of program support. The persuasion must occur prior to legislation.

Both fellowship stipends and companion grants should be time limited.

The success rate of completion of doctoral requirements is limited in some instances. It would appear that persistent failure of doctoral candidates to complete requirements within an approved period of time in given institutions would warrant appraisal of the adequacy of faculty and institutional resources as well as the criteria employed for selecting the graduate students.

Criteria for the selection of students to receive fellowship awards should take into account not only academic ability but evidence of motivation, initiative, and accomplishment indicative of the contribution the graduate will make to society after completing graduate work.

The attributes of fellows should be similar regardless of the discipline of study. Use of the accepted criteria might serve as a basis for screening applicants to undergraduate programs and for evaluation of the [illegible]t throughout the program of study; the intent being to identify at an early stage and age those who might be potential sources for a doctoral manpower pool.

Increased Federal Work-Study Funds

Graduate nursing students have had an advantage in that the majority can and have traditionally supported themselves by combining part-time study with part-time employment. It is the nature of the work experience that requires examination in certain instances. In a work experience that relates to the program of study, the graduate student and personnel in the work environment experience mutual rewards. There are numerous examples of innovations that have occurred when a highly motivated student acts as a change agent in the course of her/his employment. Federal Work-Study Funds for nursing students might be focused in underserved community service areas with limited funds for employment. The outcome would be twofold in this instance.

Criteria are suggested for the award of new project grants to encourage and assist graduate schools to develop responsive and effective programs in new areas, and models of graduate training:

The criteria should be more specific than just versatility, and the restructuring and revitalizing of professional schools. The need is for specific criteria that would identify existing or potential centers of excellence with a potential for influencing social change through the actions of both the faculty and the program graduates.

Summary

My "look" at the criteria impressed me with their potential for insuring the quality of a doctoral manpower pool in nursing. The emphasis throughout the document was on the need for a reconceptualization of approaches to doctoral education that would remove the stereotypes associated with traditional practices. Reforms are being attempted currently in only a relatively few institutions and all too frequently trends are inferred more from rhetoric than from actual performance. What are the specific inferences for nursing? My inclination would be that of identifying the nature of the strategic positions for a highly selected population of doctoral candidates in nursing. At this point in time, pro-

jections of nursing nee[illegible]iewed by society and by the profession are more related to strategic positions than to actual numerical requirements. Perhaps I am in error in that I am injecting a sense of urgency for what may appear to you to be a limited goal. I am rather comfortable with this mind set in the present era. For I find so many whose judgments I respect cautioning those of us with major planning responsibilities to limit their forecasts of need to a 3- or 4-year time period and thus ensure flexibility in response to an unpredictable social scene.

EDITED TRANSCRIPT OF DISCUSSION

Institutional Requirements

Moderator: Dr. Myrtle Aydelotte

Dr. Aydelotte: The use of the word institutional as we will be using it refers to academic health centers, community hospitals, HMO's, nursing homes, and other "in-patient" settings.

Our charge has been given to us in the form of four questions:

(1) What kinds of work situations require nurses prepared at the doctoral level?

(2) What kinds of work situations lead to nurses with doctoral preparation being productive?

(3) What number do we need in what situations?

(4) On what basis are these needs predicted and projected? Another question needs to be added and that is the time dimension. Do we want to talk about a 5-year time frame in view of the many things going on politically and socially or do we want to talk about shorter or longer periods?

Participant[1]: I think the longer the better when you consider the length of time required for somebody to get a doctoral degree.

Participant: We have certain time frames that are set up by the length of time our production takes. It seems to me that if we start at about 1976 and take a 4-year production cycle which brings us to 1980, that we might think about successions of 4-year cycles.

Dr. Aydelotte: I would like to know whether or not we accept that graduate education is for career training and that we are looking at marketable career training.

Participant: One of the difficulties with the market analysis approach is that there may or not be a market for the product because the product is not known to be marketable.

Participant: If you would just take the example of nurses on the faculty--there is a huge market right there, because we just do not have enough, since most nurses do not have doctorates.

Dr. Aydelotte: I think that what I am hearing is that there might be other types of positions that should be mentioned.

Participant: There is the issue of freedom of choice versus overall planning. As I see it there has got to be some rationale. Take engineering. Everybody talks about putting a man on the moon, but unless there had been freedom of choice, they never would

[1] The stenotypist did not identify the participant by name during the first session of the conference.

have been able to train the engineers to even begin with the experimental kind of work that was necessary to put a man on the moon.

Number projections depend basically on two issues: the number of programs and the size of each program. I think that if we do not understand this early and say that we do not need very many programs, that each can be enlarged, then we will actually saturate certain regions while others will be totally unsaturated.

Participant: We need to look at this very carefully, because the other choice is to go for small programs. The third approach is to have a combination of small and large programs. To keep regional considerations in mind, we need to evaluate responses from settings in which nurses can practice.

Dr. Aydelotte: We have talked about the criteria for selection of students and for program development and evaluation. We have made references to criteria for the educational process. What we are charged with is to really look at these criteria in predicting the numbers of doctorally prepared nurses we will need. We are to focus now specifically on institutional settings. I want to look at two questions in particular: (1) in these institutional settings, what kind of work situations require nurses at the doctoral level, and (2) what kind of work settings in the institutions lend themselves to research and development efforts.

Participant: I am thinking of medical centers that have nurse researchers . . . this is to improve the quality of care.

Participant: I would suggest, in connection with that, having some of our directors of these agencies with preparation . . . I certainly think our key nursing leaders in administrative positions need doctoral preparation.

Participant: A lot depends on how you are going to define doctoral preparation. If you are talking about the Ph.D. and research training, I question whether this is relevant for the type of job the nursing director is required to do? I think it is important in our discussion today to specify that we are interested in all sorts of doctoral programs.

Dr. Aydelotte: I have heard two different points. I have heard that for nursing service delivery we need doctorally prepared nurses in key leadership positions and also for Research and Development.

Participant: We need to expand this and include not only medical centers but other facilities. We should look at community and ambulatory care settings.

Participant: I suspect there may be a more basic issue in relation to doctoral preparation . . . and that is what we might need to

look at in terms of role. Do we believe doctoral preparation is necessary for gathering and acting on clinical data in a clinical practice setting? Do we believe that ultimately doctoral preparation is necessary for the work of patient care?

Participant: When we are talking about nurses with Ph.D.'s, we are talking about nurses who are going to delineate and test alternatives of practice.

Participant: In situations like comprehensive planning councils, there are doctorally prepared personnel who can work within a region to make some consultation available.

Dr. Aydelotte: It has been suggested that we do need doctorally prepared nurses to work in academic health centers.

Participant: To me a teaching hospital is one that has educational programs for two or more health professions and is of sufficient size. I think that is probably less important than the sophistication of the programs.

Participant: The Council has characteristically specified that at least three of the five major medical specialities must be present and accredited.

Participant: We know in one sense that we will need people who would be engaged in scholarly nursing practice, but I have also heard them say they need to be engaged in leadership positions. These would not be the people doing the research, but the catalysts in the system.

Dr. Aydelotte: I think we are talking about two things. We mentioned research and development and then we moved to the leadership role. We haven't defined research and development yet as to what this encompasses.

Participant: Until we can speak to purposeful roles with persons in compatible positions we can't effect what we are going to do.

Participant: I wonder if our discussion would be facilitated if we could get more ideas by looking at question two.

Dr. Aydelotte: Question two deals with the matter of where you think doctoral nurses could be productive, not where they are needed but where they are productive.

In what kinds of settings could she effect change and make things different?

Participant: One has to look at hospital administration and its willingness to accept this. It has to be a matter of selling the nursing program, and I think this can only be done in a place that already has a research program, like a teaching hospital. What kinds of nurses with doctoral degrees can really change the existing arrangement of things?

I hear people talking about selling yourself and convincing other people, but this is not a very effective way to bring about social change. If you want to look at the whole rise of minority groups and women's movements, it hasn't come about by selling or demonstrating techniques. It has come about by a certain collective action that has taken place. You had to do some educating along with it, but people don't easily remove themselves from positions of power and control by being educated to find out that other people are just as good as they are and do a thing more effectively than they do—that drives them up the wall

Participant: In response to that, I have been jotting down here some things that are going on, that doctorally prepared nurses are doing. One nurse working wit[h] a crippled child took it upon herself to do case finding in the community to find people who re not being treated, and to do a systematic study based on cost, patient, and family problems. Another nurse worked ospital with new technology. Black students and others were erested in assessing health needs of people in the ghetto areas. These are some of the examples that start with hospitals but end up reaching into other areas.

Participant: Can you justify that a nurse with doctoral preparation does these things?

Dr. Aydelotte: One thing that a doctorally prepared person can do is to be a rallying force around which to gather together a group of nurses who begin to think differently about what they are doing.

Participant: One of the problems we are into is that by talking about institutional settings we limit our view of the doctorally prepared nurse to that of change agent—certainly one that combines innovation with research and with nursing practice. Maybe we would be better off to talk about the needs which the future system will need to meet, not overlooking current institutions.

Participant: We need to come up with a number for how many we need, and it is such a vast number that it is hard to get the proper perspective.

Participant: We have 800,000 registered nurses. Two percent of all nurses with doctorates are sitting in th[i]s room. If we fall back on some of the old ideas that for a prof[e]ssion to be viable and in order to add to its body of knowledge it has to have as a minimum 1 percent of its total working force engaged full time in research, we would already have a need for 8,000 in basic research, and what I have been hearing is about applied research.

Participant: We could say that the substance of that work which requires doctorally prepared nurses is that in which the person has a chance of being effective in making changes.

Dr. Aydelotte: I also hear that there is such a great need in the academic world, that maybe we are being unrealistic to expect doctorally prepared nurses to move into our institutional settings.
Participant: The academic world is a base from which one stretches.
Dr. Aydelotte: What do we think society needs in the institutional setting that a doctorally prepared nurse can provide and succeed at?
Participant: I have been thinking of what would have been substantially advantageous in my administrative setting had there been doctorally prepared nurses all up and down the line. Associate Directors with a nursing background and with a management doctorate would have been a useful addition. A doctorally prepared person with a background in two or three of the major units of the hospital could have made significant contributions to the quality of care. The Director of Nursing of any hospital spends from 40-60 percent of the annual budget of the hospital. I don't know of any executive spending that amount of money without the resources of a Research and Development staff. I am talking about the development of an R & D staff that would research and validate the entire mode of both clinical and administrative practice. I think it is in the development of R & D that we will begin to lay out and to test more appropriate, and more efficient ways from a cost benefit standpoint of delivering nursing care.
Dr. Aydelotte: At this point we have identified five different problems: (1) that the whole health care scene is changing, and will change, (2) that we need better prepared nurses in the organizational management of service regardless of what that nursing service agency might be, (3) that to adequately manage, a Research and Development staff is necessary, (4) in the whole area of clinical practice R & D should be active in terms of defining expertness of care, and (5) to meet these manpower needs we need to determine what percentage of our faculty members with doctoral preparation could move into these areas.
Participant: It seems to me that we are saying that at every level of nursing practice and in educational settings there is a need for people prepared at the doctoral level. If we start with assumption it might be easier to figure projections by looking at how many people we would need in positions of leadership to accomplish this.
Participant: In other words we are saying that we might take the number of hospitals, multiply this by a constant, and it will give us a number to start with. How many teaching hospitals are there?

Participant: Four hundred and ten, I believe.

Participant: And these are the principal academic training centers of the United States.

Participant: Perhaps our first priority ought to go to certain identified areas within these academic centers. Could I ask how many doctorally prepared nurses your organizations could bear in terms of economics as well as innovative thrust?

Participant: Perhaps we should hold this question until we have discussed the manpower needs in other sectors of practice.

Extra-Institutional Requirements

Dr. Laura Dustan: I would simply like to make a statement that, if we do not seed the practice world with a certain number of people prepared at the doctoral level, it is going to be a very sterile practice world. One of the things that troubles me is what happens to our graduates when they go forth from the halls of the academic world. When I got into the practice field I began to understand to a far greater extent why they could not be change agents or were not being change agents—there aren't enough of them, the system is inflexible, and they don't have the backing they need. I see the need for a goodly number of doctorally prepared people in the community nursing situation where we will probably have the best opportunities for independence of practice. We also have a tremendous input possibility in the whole area of comprehensive plans. And there are also professional societies and professional journals that need the input of doctorally prepared nurses.

Participant: When you think of the tremendous need for doctorally prepared nurses it's overwhelming, but I think the payoff would be great in terms of not only independent practice but also research into some of the premises on which our practice is based.

Participant: You are talking about the ability to command and control your own practice and set quality standards.

Participant: I certainly agree with you that the future must hold opportunities for us to share in the decision making and policy implementation, but also in certain areas of research development.

Participant: We must have doctorally prepared persons in the delivery system whether it be hospitals, nursing homes, or health care agencies. We need experimentation into how to deliver services more effectively and efficiently.

Participant: In the area of the chronically ill and aged we have a wide open field, and I would guess that we would have legislative and financial support—nurses who would take on nursing homes

and straighten them out. We need doctoral training to conceptuallze such ideas.

Participant: We need to develop people at the doctoral level who can conceptualize in nontraditional ways. There are a number of fields open to us if we had the people with the vision to move into them.

Participant: In terms of the environment, we have this whole problem of prevention. This is a whole area in which there needs to be experimentation.

Participant: When it comes to the area of prevention, we get into trouble because we cannot demonstrate what it is we are preventing. One of the things doctorally prepared nurses could do is go out and establish the baseline of "normalcy" so that we can start validating that we are actually effective in our preventive endeavors.

Participant: A lot of our care of children is very traditional. I do not know of any place where there has been a major community study in which the nurse has been the innovator in planning and identifying which groups are in need of service and then identifying resources.

Participant: A community nurse, instead of dealing with a population, could assess the health status of her population group.

Participant: I am prepared to propose some beginning areas for the need for doctorally prepared nurses in extra-institutional settings. The first role is that of conceptualization. The second is the level of knowledge and capability required to direct a new operation. If you want to call that administration, that is okay with me. The third one is that of playing a role that is evolutionary in nature in terms of organizational concepts. These are three essential roles for nurses prepared at the doctoral level in extra-institutional settings.

Participant: I would like to make another suggestion since what we have been talking about is basically a nonpathological model of care. In talking about prevention, the doctorally prepared nurse should be able to approach problems in relation to the family as a whole and relate to the family unit.

Participant: What are the critical positions in the key policy program areas in extra-institutional settings where doctorally prepared nurses could make a difference?

Participant: I would say that if we had top notch leadership in the regulatory agencies and public and State agencies, that would be a start.

Participant: There are the State commissions on women and the comprehensive planning agencies.

Participant: I would guess that the greatest attack would be from those positions that relate to political and legislative constituencies.
Participant: One of the points that we have made is that decision-making should be by design and not by default, and that it is an activity we expect from doctorally prepared nurses whatever their setting might be. Secondly, doctorally prepared nurses should move into new areas of the health care system and look at reforming the roles—not just extending them. Thirdly, we need to have enough ambition and sense of urgency to activate and carry out the implementation of new systems of health care delivery—we need that risk-taking ability.

Academic Setting Requirements

Dr. Mullane: We will turn then to what I suspect we will find the easiest area because we are most familiar with it. There are two faces to this problem. One is the face of the need, as a service agency itself, the service we produce being education rather than patient care or something else. The second order of things is to deal with the criteria Dr. Lambertson has listed, primarily under project grants, where she assumed criteria of excellence or fitness for centers in which Ph.D.'s can be trained. The ambitions for doctoral studies in some of our institutions are not necessarily tied to their capabilities.

Yesterday we proposed a time frame with sequences of 4 years. If we use this time frame the question becomes, "What are the needs in universities for staffing, first in 1980 and then for the long range?" What are the premises for our projections? It is my practice to start figuring things out from the top, where most effective decisions are made, and I would like to ask if anyone knows what our supply of doctorally prepared deans is now? Is it our assumption that deans of the university programs with baccalaureate and graduate programs would have doctoral preparation?

Dr. Chater: It is not only an assumption, it is a criterion and measure for accreditation.

Dr. Mullane: Now we have a criterion. Does anyone know the number of deanships we have.

Dr. Grace: 231

Dr. Mullane: How many of these have deans prepared at the doctoral level.

Dr. Grace: 91

Dr. Gortner: That is for the university level, I believe. Dr. Bourgeois and Dr. Phillips have gotten together the figures for all

higher education. They could identify only about 125 heads of the almost 1,400 schools who were doctorally prepared.

Dr. Mullane: Considering only collegiate schools, this would require a minimum of 100.

Dr. Gortner: That projection does not take into account the needs for programs within a university structure staffed by doctorally prepared people. One of the most frequent complaints is that our Ph.D.'s are not doing research but are putting their energies into program development.

Dr. Grace: Do we have any way of knowing how many doctorally prepared nurses will enter the employment scene in the next 4 years.

Dr. Carnegie: Last year there were 402 doctoral students enrolled in programs throughout the country; 27 were graduated.

Dr. Mullane: Having reached agreement on the dean's level let us consider department heads, chairmen of instructional units, or whatever they are called. Most universities generally have five of these. What is your position about people at that level?

Dr. Aydelotte: I would say that in programs where they have graduate study offered, these must be headed by a doctorally prepared person.

Dr. Verhonick: You have to have someone, do you not, to prepare and direct a graduate program in nursing.

Dr. Hadley: I'm sure 8 years is too soon to make this kind of prediction, but it would seem to me that we ought to explicitly state that in academic settings, in 4-year colleges with baccalaureate and/or higher degrees, that everyone holding an academic position of assistant professor or higher, should hold a doctorate.

Dr. Aydelotte: As an immediate step we should say that all division directors and department chairmen should have doctorates, and that in 12 years all persons in the academic ladder at assistant professor and above should have doctorates.

Dr. Mullane: I am uneasy about the emphasis on the department head. The real bottleneck is the people who are teaching master's students. It is an educational truism that one is assumed to be qualified if the person has one degree above the student he or she is teaching.

Mrs. Dumas: I would like to see the leadership prepared at the doctoral level with the assumption that they would make it possible to provide the framework and leadership for the quality of teaching that would be the best possible, given the faculties they have, and would also be committed to upgrading their faculty.

Dr. Mullane: So the priority should be on the division head or department chairmen, but a very close second should be the teaching of graduate students.

Dr. Chater: Those who are sponsors of doctoral students ought to have a doctorate.

Miss Scott: You are talking about 1,200 people in this preparation of department heads. If we are producing 30 persons per year we are talking about 40 years to meet this projection.

Dr. Christman: What is the possibility of recruiting already trained scientists in other fields and converting them to nurses?

Mrs. Dumas: We are getting stymied, because we know that we are not going to be able to fill those needs within the time frame set, but it might facilitate our discussion if we talk about needs and get them all out and then go back and see how many of that number may be produced in 4 years, 8 years, and 12 years.

Dr. Mullane: In addition to deans, graduate faculty, and department heads, are there other needs for nurses with doctoral preparation in academic settings?

Dr. Verlonick: In academic settings there should be an assistant or associate dean to facilitate research with the faculty. There should also be a director of research prepared at the doctoral level.

Dr. Caseley: What about the whole arena of continuing education?

Dr. Aydelotte: It would seem that these kinds of positions could be joint ones between the university, the educational unit, and the delivery unit.

Dr. Mullane: How urgent is doctoral preparation for directors of nursing services in the health care setting the university owns? I think we ought to say something about identification of centers of excellence, but before that, let's summarize. The first priority is for administrative leadership prepared at the doctoral level, next is for those who teach graduate students. A third priority is for those who hold any order of professional rank at the university level. We did not talk about the relative urgency of the needs for research and developers of research in our health service agencies, such as university hospitals.

As for excellence of universities, in certain institutions, certainly those which are going to produce doctoral programs, there ought to be not just people doing and applying for research, but it ought to be organized in such a way that it becomes a type of research institute. Institutional criteria might go something like this: (1) number, competence, and research productivity of faculty, (2) research, teaching, and clinical practice track record, (3) for doctoral study there ought to be some accredited antecedent programs

in academic order directly under the program proposed, (4) what type of gatekeeping does the university operate on new disciplines—what kind of pass-through for program approval and student admissions are required, and (5) what resources exist and are at the command of nursing, such as physical space, libraries, clinical services, and research facilities?

Dr. Chater: There may be some nontraditional approaches to graduate study that we haven't thought of before, where we could make creative use of other people, other times, other places, and other programs.

Dr. Kibrick: Integration of nursing faculty with other programs in the university complex is another.

Dr. Mullane: In relation to Dr. Chater's comment, in the face of the scarcity of resources, it may be appropriate for us to look to neighboring or associated schools for consortial arrangements.

Summary Session

Miss Scott: We would like to ask each of you to identify the criteria that you think is most essential in the development of a statement on manpower needs.

Dr. Kibrick: I think the greatest need really is research studies related to the quality of practice in nursing, effectiveness of utilization of personnel, utilization of appropriate manpower in terms of numbers and skills, cost effectiveness, numbers and kinds of nursing programs needed in health delivery service. To do this research we must have a large pool of doctorally prepared nurses to investigate these problems. Preparation of nurse researchers belongs in the university setting, which implies that there must be quality doctoral programs that can begin to focus on some of the problems that need investigation.

Dr. Willman: Mine are related to academic programs to prepare the people for developing programs and developing research at both the undergraduate and graduate levels.

Mrs. Dumas: The basic criteria which it seems to me we should follow is that of health service delivery needs, specifically in the area of manpower development and utilization. The statement should use this as a base and follow from that in relating education, higher education, to the service delivery needs, and that is how the prediction about how many and what kinds would follow.

Dr. Caseley: In predicting, the most important criterion is to produce sufficient nurse educators-researchers to assure quality of education. It goes without saying that the purpose of this education is to assure the highest quality service by nurses.

Dr. Bourgeois: My criteria are concerned with the growth of the total population in the United States and in the world, the growth and the proliferation of new and different health care delivery systems, and changing standards in nursing educational programs.

Dr. Galkin: I am concerned with the improvement of patient care services in the community. I see the need for research in our area to keep people out of hospitals and nursing homes. We need the kind of leadership and vision to expand these services and make them available to a much broader community.

Dr. Sorenson: My approach is a little different. I merely felt that all heads of baccalaureate programs must have doctoral preparation.

Dr. Christman: We need doctoral people to man every strategic position in the entire nursing enterprise—practice, education, and research.

Miss Stanford: We need to have doctorally prepared directors of nursing service, be they in the community or in institutions, to be able to assume effective leadership in the establishment of new programs for the delivery of health services.

Dr. Dustan: I am concerned with the need for nursing policymakers for health care delivery, because health care is the largest resource for health services and society needs: Nursing must provide leadership to contribute its share to the solution of problems of efficiency, quality and quantity of services provided.

Dr. Jacox: I have two. The first is a priority one. Every institution with a baccalaureate and higher degree program should have several nurses prepared at the doctoral level, depending on the total complement of faculty at that particular institution. These persons will most likely be clinical directors and clinical researchers. My second is that major academic health settings should have several nurses prepared at the doctoral level, depending upon the total complement of staff in a particular agency. Those persons will be in various positions but will most likely be directors of nursing departments, clinical program directors, and directors of research facilities.

Dr. Batey: Doctorally prepared persons in nursing are most critically needed to effect the leadership of nursing in indirect and direct health service delivery. Indirect services refers to the discovery of knowledge essential to decision-making and the preparation of future nurses. Direct services refers to effecting and enriching health service programs. Research in academic programs in senior universities has the highest priority.

Dr. Passos: Considering the rate and nature of social change in which needs and demands for health care are changing, we require increased numbers of people whose education best prepares them for three things: (1) to identify and address previously unaccounted for problems (2) to articulate the resources and needs, and (3) to provide leadership in the development of persons in the profession.

Dr. Mullane: Development of sufficient faculty for the graduate training of nurses, to staff the necessary units, to set nursing care policy in and for future health care delivery systems. Priorities for 1980 for me are, first, nursing directors of graduate programs, secondly, faculty teaching master's students (of course doctoral students as well), and third, faculty and nursing service staff who are charged with designing and testing more effective and efficient methods of providing nursing care to patients.

Dr. Aydelotte: Mine is very much the same. I will not read the first one, but it emphasizes the leadership in the baccalaureate and undergraduate programs and health care delivery systems associated with the academic health care centers. I am saying this joint leadership in the delivery of care. Second, improvement in the education of nursing students. Third, innovation in quality and efficiency in delivery of car as taught in the educational process. Fourth, to increase doctorally prepared nurses. Fifth, to influence policy and program development on health affairs.

Dr. Levine: This may overlap with some of the other criteria, but it is one that is very close to my heart. There is a minimum need for 500 nurses in the United States, with doctoral preparation, in the area of research and consultation, in health care planning and evaluation, operations research, and systems analysis applied to the health field.

Also health economics, comparative health systems analysis and management of information systems—in this last area, I think what we are going to find over the next 4 to 8 years, to use the four increment, is that the health area is going to become increasingly important. Many hospitals are beginning to establish hospital-wide information systems. I think it is terribly important for nurses to have some input into this, some expertise in the development and execution of management information systems.

Dr. Mullane: Gene, that point has not been raised in this discussion and I want to underscore it. Unless administrators and nurse clinicians get with what you have just described as "the institutions," we are going to lose our shirts in the cost of inept computerization.

Dr. Harkleroad: I approached it very broadly and made the statement that I thought leadership positions in nursing education and service and related organizations should be filled with people who hold a relevant doctorate, and I listed them. You have heard them before—teaching, research, practice, policy positions and administration, such as deans and so forth.

Then I added something which is dear to my heart and that is the doctorate should be based on a bona fide baccalaureate nursing degree because if you start out with an associate degree and get something all the way up the line, are you really talking about nursing?

Dr. Eyres: This criterion I thought important, because it is going to take us a while to get the number of doctorally prepared nurses into the settings we would like. Each higher education program in nursing should have available, on demand, a doctorally prepared nurse who can assist State and local service personnel with service program evaluation and practice research.

Dr. See: The thing that impresses me most about this conference is that people are defining doctoral production as vastly different than what doctoral production is at the present time. What I think a criterion would be is a very, very careful assessment of the current content of doctoral programs and measure that against these expectations, which I think are very, very high, for example, those for systems analysis, management information and leadership. I think there is an assumption this automatically goes with the Ph.D. In my experience, it does not necessarily follow.

Therefore, if this is what is expected at this particular time in doctoral preparation, then I think the current programs and the currently projected programs need to be developed along some very specific kinds of guidelines. To my knowledge, these guidelines are not available.

Dr. Lambertsen: I think that would fit into our concept of centers of excellence.

Miss Elliott: I focused on the priority in nurse faculty, to plan, develop, and teach faculty for master's programs in nursing, to lead and conduct research and patient care in other relevant areas, to provide leadership and innovations in patient care in all settings, and to multiply numbers of doctorally prepared people to build toward other priorities.

Dr. Phillips: I think it is very important for us some place in the introductory part of the statement to stress that a gap exists between what we now have and what we think is the minimal number of doctorates that we need to have for quality patient care. I think

this is important because this report will be addressed, in large part, to the society that has to support this rather than to nursing. I think we have to stress to them over and over again that our doctoral situation is not the same as that of other disciplines.

Dr. Grace: My major concern is that, in viewing the numbers of faculty needed with doctoral preparation, we not lose sight of the need for some to either use the academic setting as a launching pad for moving into innovative roles; to allow for moving out of traditional settings, and to work at innovation in developing new modes of delivery of health care. We should work toward revamping or modifying the health care system that we have right now, and to do so requires our best minds and a research data base.

Dr. Verhonick: The priority I have for the academic setting relates to preceptorships for research. This could be standard educational practice and those people who are involved—I do not know if we call them role models or whatever—would be examples for all of the people who are going to be doctorally prepared.

I think there are a lot of people who were prepared in the past who are not practicing research even in education—they are not advising students, or what have you.

I think we have suffered from a phenomena I call the PPD. Some people have the Peter Principle Doctorate and do not do so well. I think one of the things that has to be looked at is the selection criteria for doctoral candidates.

Preceptorships really mean doing research, doing education, knowing what the thing is about, so that they will not be groping around, not knowing what they are doing.

Dr. Hill: I did not comment about the roles because it sounded to me as though we had a fair degree of agreement about the kind of roles for which we need people who are doctorally prepared, but I think if one makes the assumption that predictions should be made on current and projected need, then it would seem to me to be important to identify the nursing care system in relation to the emergent care system, two entities which both need definition at this point.

It seemed to me that research and development in meaningful and manageable geographical units might be suggested as a first choice. We hear a great deal about maldistribution of nursing expertise. If we looked at the systems in terms of geographical units, this might, in some way, alleviate that problem.

The second point is the establishment of university centers of excellence which would maximize our scarce resources. It seems this might be one way to speed the production of doctoral manpower in specific areas of need that have been identified.

I am not sure the next statement I am going to make belongs here, but I have a great need to say it and while I have the floor, I think I will just tuck it in. We are talking with a great degree of freedom here about the need for doctorally prepared nurses. We have no ambivalence in our thinking, but those of us who get around the grassroots, are aware that our perceptions are not the same as the perceptions of "nursing at large." One of the things that has high priority is to share and sell, either in a hard or soft fashion, the ideas we have explored here. In many ways, the profession can be its own worse enemy and unless we have the support of the group in the kinds of things we are talking about here, working through levels of resistance, with which we have had years and years of experience, is something that may well have gone amiss. If we can look at it and make the margin of error smaller than that, we have accomplished a fair amount.

Dr. Chater: I have a most practical one and that relates to the sponsor and dissertation committee members. Then I have a "most needed for 1974" item, and that is nurses with doctoral preparation who can systematically evaluate and test educational programs at all levels, including project and training grants.

Dr. Wilcox: I took my thoughts back to the second question that was brought up yesterday afternoon about what kind of work situations lead doctorally prepared nurses to be productive. I think if you answer that question in terms of what doctorally prepared nurses can do for nursing right now, you come back to the fact that needs for teachers and educational administrators and researchers have to be considered first. This may sound very strange from a person who has never been an educator and has always been in the service end of things.

I think my problems, my personal problems, and many that I have had in other work situations are based on the needs that nursing education has not been able to meet for us.

If we are going to bridge this gap, you people in the educational system have got to have the strength to change students and produce for us people who are going to want to go on and be these cannot do it with 2-year graduates. My priority would be that we must consider those needs first, and that the needs for people in nonacademic situations are perhaps going to have to wait.

Dr. Chater hopes for some fortuitous things, but I do not think those are the areas where people can be the most productive and the most accepted at this time. I think they *can* be productive in academic centers and they *can* be accepted much better than in some other areas.

Dr. Hadley: I think I would like to add to Dr. Lambertsen's statement and to Dr. Wilcox's statement that one of the priorities would be to encourage those who hold doctorates, practicing in administration, research, teaching and direct service to patients, to seduce baccalaureate graduates with potential into the scholarly line, whether it is for the practice of administration, research or teaching. That is something I do not think we concentrate on.

Dr. Carnegie: I think Dr. Christman has spoken to this and maybe someone else, but I will speak to it again. Since the need for more doctorally prepared teachers in the approximately 300 graduate programs has been emphasized here throughout this conference, my priority would be on the second criterion which reads, "various roles will continue to require a mix of competencies, in research and practice, as well as the teaching of graduate students." Not necessarily in that order.

All doctoral students are exposed to the research process, I think that is understood, but not all of them get the experience and practice in teaching, and I think that is very important, to fill those positions we have in mind.

Dr. Goltner: I came initially with the premise we could not look at the traditional economic methods for forecasting projections, but we would have to look rather heavily at societal needs involving dimensions of health care delivery in the United States and also abroad. I am very taken with what Dr. Hill has said and others of you have said it in different places as well. I think an additional coequal criterion has to be the value the nursing profession puts on education at this level. Otherwise it is going to be viewed as either a federal ploy or an elitism that will benefit only the elite and I think one of the critical features is what Dr. Hill and Dr. Wilcox have alluded to in another way—Dr. Hadley has reinforced it too. That is the value the profession sees in its role as an agent through which society deals with major problems. There is a great deal of consistency in what you are saying.

Dr. Jacox: I would like to reinforce what Dr. Gortner had said to try to arrive at some discussion of universities.

It is important that the context of whatever criteria we select be carefully spelled out, so that we are really relating the substance of a doctoral program or doctoral programs to societal needs. We must not assume that a doctorate is a doctorate, and that, therefore, everyone in certain positions needs one.

I do not think that is true, particularly for the short-term basis. I think it may be fine to say that 50 years from now everyone teaching on a faculty should have one.

Right now, realistically, with what we really can do in the next 12 years, even, and I am seeing that as a short-term goal, we really have to speak to the total complement of nursing resources, and where people with doctoral preparation can be best used, depending on what they have learned in their doctoral programs, what specific particular abilities they have acquired from their particular program, and how that relates to society's needs rather than to a universal statement.

Mrs. Hudson: My principal criterion for prediction of needs would be to provide research into health care delivery centers of all kinds.

Dr. Lambertsen: The predominant base of employment in the immediate future will be the university or academic health center. This base will increasingly involve the nurse in outreach programs for research and development, either self-initiated, or on demand, from community service agencies.

Trend data for research and development will assist in projecting needs, including inter-institution needs.

Dr. Aydelotte: My reference in my statement to credibility deals with the point you are making. The nurse with a doctorate must show what she has to offer as credible. This is the thing for which most of us are criticized, that we are up in the clouds and that we cannot show how we can make our knowledge and our skill useful to society.

Dr. Christman: It was not so long ago that the clinical psychologist and all psychology for that matter, admitted that they had most of their numbers prepared at the master's level, and that this was insufficient. They just pushed ahead and declared the doctorate as being the professional degree.

We all know they prepared a lot of people who bombed out and did not do so well, but in the process they also prepared large numbers of persons who were reasonably effective. There was some turmoil among the people holding master's degrees in psychology at that time and warnings that this was too much pressure on the profession—that they were going to price themselves out of the market. Instead of that, it became a very productive enterprise, because graduates went out and did all the kinds of productive things. You are quite right, Dr. Jacox, everyone is not going to be productive, but that is a risk we take in any profession. I do not think we ought to let that deter us.

Mrs. Dumas: There are many nurses who have been productive and who have achieved a great deal without portfolio and perhaps we should include somewhere the notion of providing opportunities for people who have made contributions to get appropriate credentials. Opportunities should be provided to these people.

Then, too, there are a lot of nurses in strategic positions to influence policy who do not have doctorates, but if they had come along at another time they would have had the doctorate. We are talking as though we can always put people in at step one and take them straight through the doctorate.

There are people who could come in at step three, perhaps, who are currently producing and doing those things we are saying we want to prepare people to do, and perhaps the criteria here would be for nurses (who are already in practice) to advance as far as they can and get the appropriate credentials.

Dr. Lambertsen: You are saying, relative to the criteria for selection of students, that one should look at many of the characteristics of success, where someone is at an advanced stage in the profession

Mrs. Dumas: I am suggesting another approach, so that it would not seem that someone on high has made a decision that every dean, director and chairman or what have you must have a doctorate. I do not know the kind of reaction that would come from that.

Dr. Aydelotte: I feel I have to say something here. I am not afraid of the hoi polloi of the profession. The associate degree or the diploma degree people, the baccalaureates, or the graduates, the ones who are really "practitioners" in our group—I am not worried about them. I am worried about how we behave. It seems to me that the onus is really on us, showing the value of the additional talent and additional education that has been given to us. I think this is the problem with doctoral people, so it is with a certain amount of humility that I work and if I cannot show that I am valuable, then I should be replaced. It seems to me we need to inculcate this. I am not afraid of a selling job. What I am afraid of is elitism and arrogance.

Dr. Mullane: This is true. I will take the point and extend it. I have been a nurse for 43 years this year, and I must say that the profession has supported every single progress made by nursing, sometimes less willingly than others, but we have changed. In my professional lifetime, we have revolutionized a whole professional education system. The doctorate is the natural education extension of that effort and I am confident that nurses, registered nurses, everywhere understand this. They have kind of a gut understanding of it. While there will be some professionals who will question, I will predict that we will get support in expanding and creating these programs, just as we got for master's and bachelor's programs.

Miss Scott: I think we have come to the end. We were right in bringing you together to discuss this subject. Even in a very short space of time we have dealt with what I think is a very complex subject, and we can thank all of you for your contributions.

CONFERENCE SUMMARY

This conference, which has dealt with doctorally prepared nurses, has approached the problems of manpower requirements and educational preparation with considerable breadth of focus. It has been clear throughout, however, that there exists a serious gap between the present level of doctorally prepared nurses and the least number that is acceptable in any consideration of their effective impact on the improvement of health care in this country.

A serious concern, expressed repeatedly by administrators, is their inability to locate and employ nurses with sufficient academic preparation to approach those crucial problems related to education and practice which must be effectively investigated if the profession, and the quality of health care provided by it, is to advance.

No discipline can expect to advance unless it constantly adds to its knowledge base, both in terms of solutions to problems which have inhibited growth, and in terms of the incorporation and adaptation of new knowledge gained in disciplines impacting upon it. The question of just how many workers are needed within a discipline, whose major function is research that augments the base of practice, is problematic, but, clearly, a significant number are needed. While related disciplines so vividly see this need that they require doctoral preparation for initial entrance into their ranks, nursing, with more than one million individuals registered to practice, can only boast of between one- and two-tenths of 1 percent of its members who have doctoral credentials. The effect of this deficit is serious in this discipline which represents the largest single group of health care providers in the Nation.

The shortage of doctorally prepared individuals in nursing stands in contrast to the possible overproduction that has occurred in many of the social and physical sciences, where allusions to "Ph.D. gluts" have been reflected in public and legislative trends to decrease Federal support for doctoral preparation in these subject areas. An unfortunate conclusion has been drawn by some that possible overproduction in some disciplines should signal cessation of support for doctoral study in all. Disciplines must be looked at individually if the best balance is to be achieved between the use of available resources and the readiness of the various fields to contribute maximally to the improvement of health care.

The Conference on Doctoral Manpower in Nursing was called to bring together nursing leaders in the fields of education, practice, and research to attempt to identify factors of importance in projecting manpower needs for nursing at the doctoral level. Participants were chosen to represent a wide range of work areas in nursing, and to bring to the sessions their combined expertise and experience.

The group focused on the possibility of projecting approximate numbers of nurses with doctoral preparation needed now and in the immediate future. Projections of this kind were seen as essential to the profession in understanding its overall manpower requirements, and in translating these needs to those outside the profession.

The participants were quick to identify a hierarchy of functional areas in nursing, within which the need for nurses with doctoral preparation exists. The highest priority of need was assigned to academic settings. It was felt that it was in the colleges and universities that doctoral preparation is provided, and it is there that leaders are developed who will distribute themselves throughout the many activities and functional areas that constitute nursing. It is also in the colleges and universities where the greatest potential lies for prepared staff to work with and assist service and community agencies through outreach programs. The need for strengthening the academic base which provides the training ground for all nurses with doctoral preparation was, in short, seen as the essential first step.

Certain positions within the academic setting were seen as requiring doctoral preparation: the dean in all institutions of higher education offering baccalaureate and higher degree programs, the associate and assistant deans of these schools, departmental chairpersons, faculty with professorial rank, and faculty responsible for research and development. This listing must certainly be seen as conservative if one considers that it does not include all faculty teaching graduate students, all faculty responsible for thesis and dissertation guidance, or that it does not address the almost universal fact that the doctorate represents one of the most basic requirements for promotion and the achievement of tenure in academia.

In contrast to these identified needs stands the fact that, at the time of the conference, approximately 91 of 231 deanships were filled by nurses prepared at the doctoral level. As assistant and associate deanships and departmental chairpersons are considered, the ratios become even less favorable. It is, perhaps, incongruous

to predicate a university program for nursing upon a faculty prepared at a level which does not approach the minimum standards of the university of which it is a part.

Ranking second in priority in terms of their need for doctorally prepared nurses, the conference participants identified service agencies which provide direct health care to the public. Although specific service-related positions which require doctoral level nurses to fill them were not as easily identified as those in academia, nurses with this level of preparation were seen as needed to engage in research which would further define and assist in the operationalization of parameters of effective and efficient nursing care. In addition, doctorally prepared nurses are needed to provide leadership in the formulation of agency philosophy and policy which would effect approaches to patient care provided by these agencies. Although participants who represented service agencies felt pressing needs for doctorally prepared individuals in key positions, they were, in many cases, willing to delay filling these slots so that the prepared people could strengthen academic programs in the hope that the number of nurses completing doctoral programs in the near future could be increased.

A third level of priority of need was identified in relation to the number of important work roles not directly associated with either nursing education or with the provision of direct patient services. These positions include consultants, researchers and policy formulators who devote the major portion of their time to these activities, and who work at local, State, regional, and national levels, as well as in a number of other strategic positions of importance to the profession and to society.

In sum, the need for highly prepared nurses is reflected in virtually every key policy and decision-making position in the profession. Those who are called upon to develop programs and arrive at decisions of importance must be provided with the tools that are necessary to do this well.

The participants of this conference identified many factors that must be considered in any attempt to arrive at a valid estimation of doctoral manpower needs. The complexity of the problem obviated their arriving at definitive projections, but, particularly in the academic setting, it was possible to gain a feeling for approximate needs.

Considerable work remains to be accomplished. Continuing to assess needs among those in leadership positions should be encouraged, and additional factors which contribute to the better understanding of overall needs must be identified. These additional

factors must certainly include the doctorally prepared nurse as a provider of primary care, and as a member of interdisciplinary groups involved in activities designed to move forward the quality of health care.

Of particular importance is the need for carefully designed studies which address unmeasured aspects of the issue, such as the unique contribution that can be made by the doctorally prepared nurse in a number of work settings that cannot reasonably be expected of nurses without such preparation.

Consideration should also be given to increasing the understanding of the profession at large with regard to the unique contribution possible from the doctorally prepared nurse, through assisting them to see the very real potential for the improvement of patient care that will ultimately result from an increase in these highly prepared individuals in the work force.

The challenge remains for nursing to skillfully evaluate its requirements for nurses with advanced preparation, to incorporate this as a value in the philosophy of the discipline, and to effectively educate the public, which must, in the final analysis, underwrite its eventuation.

This challenge must be met by the profession, but it will require significant assistance from both the private and public sectors. In the past these forces have combined successfully to provide a data base for the facilitation of manpower projections at all levels of nursing practice. In addition, consultation services on a wide range of factors related to programs of higher education that prepare nurses with higher education have been offered by the professional organizations and by the Government. Further, although levels of effort have differed among sources, and from year to year, considerable monetary investment has been made in the form of both private funds and federally legislated revenues. There is, certainly, every indication that this cooperative approach must be continued and in many instances increased if even minimal goals are to be achieved.

Key factors which contribute to the understanding of manpower needs at the doctoral level must be identified, defined, and operationalized. Ultimately, comprehensive models must be developed to provide reasonable estimates of need or demand. Without these, the profession cannot move forward with the clear direction it needs to accomplish its important goals.

U.S. GOVERNMENT PRINTING OFFICE : 1976 O - 243-183 (353)