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ABSTRACT

To describe conditions, assess the present situation, and develop a profile of Licensed Practical Nurses (LPNs), data were collected from a random sample of actual employment locations and LPNs by means of personal interviews with 348 administrators in employment locations, 688 LPNs, 130 Registered Nurses, and 123 aides in the states of Illinois and Iowa. Data from interviews were analyzed to obtain relationships between age, type and level of current nursing position, and type of employers. Card sorts were used for obtaining data on actual job requirements of LPNs. LPNs across all ages were a highly stable occupational group reflected by relatively continuous employment, only slightly influenced by marital status, number of children, and family responsibilities. They were almost a fully utilized group in providing nursing service in all types of employment situations, but the majority were employed in general hospitals on a full-time basis. The majority of LPNs felt that their training had been adequate but recommended that more is needed in the area of medications. A wide range of nursing functions and roles with high levels of responsibility were performed. Part II of the study is available as VT 011 351. (SB)

FINAL REPORT – PART I

Project No. 5-0126
Contract No. OE 5-85-038

OCCUPATIONAL PATTERNS and FUNCTIONS of EMPLOYED LPN'S

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Urbana, Illinois

January 1969

U. S. DEPARTMENT OF HEALTH
EDUCATION AND WELFARE

Office of Education
Bureau of Research

EXPLANATORY NOTE

Reference to the sub-studies cited on page iii is not sufficiently clear due to an editing error.

Practical Nursing in Illinois: A Profile, July 1967, was conducted and reported by the University of Illinois under a contract with the Research Coordinating Unit, Illinois Board of Vocational Education. No additional copies of this report are available from either source.

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Practical Nursing in Iowa: A Profile, July 1968, and Iowa Practical Nursing Sub-Study: A Study of Practical Nurses Who Have Been Licensed in Iowa But Are Not Presently Employed as Practical Nurses, December 1966.

These two studies and reports parallel the Illinois study and were conducted by the University of Iowa, Program in Health Occupations Education under contracts with the Research Coordination Unit, Vocational Education Branch, Iowa Department of Public Instruction. Inquiries concerning availability of these reports should be directed to the University of Iowa.

FINAL REPORT - PART I

Project No. 5-0126
Contract No. OE-5-85-038

(Proposal Title: An Integrated, Longitudinal Study Practical Nursing)

Occupational Patterns and Functions of Employed LPN's

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January, 1969

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PREFACE

This report, PHASE I - Occupational Patterns and Functions of Employed LPN's is the second of five planned to present research findings and related materials developed from a basic project entitled An Integrated, Longitudinal Study of Practical Nursing. The prime contract was negotiated between the University of Illinois, College of Education, in cooperation with the University of Iowa, Program in Health Occupations Education and the U. S. Office of Education under provisions of the Vocational Education Act of 1963, Section 4 (c), for the period June 1, 1965 until June 30, 1969.

Occupational Patterns and Functions of Employed LPN's is based upon personal interviews with administrators in employment locations, LPN's, RN's, and Aides. Data collected include personal characteristics of employed LPN's and selected functions in all types of institutions, services, and shifts. Comparisons, correlations, and analysis of interrelationships were completed from various data. Statistical analysis was performed to determine importance of functions and to identify commonality and unity.

Data from personal interviews were analyzed to obtain relationships between age, type and level of current nursing positions, and types of employers. General mobility factors were analyzed by type and level of assignment and length of time since completing training and with number of years on current job.

LPN's, across all ages, were a highly stable occupational group reflected by relatively continuous employment, only slightly influenced by marital status, number of children, and family responsibilities. Attitudinal responses reflect affinity for prior familiarity of institution, other staff, or the specific position, but job changes contributed positively to the multi-factor personal and job work-orientation; the majority perceived the current position was an improvement over past assignments.

Card sorts were the primary instruments used for obtaining data on actual job requirements by the LPN's. Nursing functions were evaluated by importance level of responsibility, and specific job requirement or expectation in the current position of the LPN. Analysis included level of responsibility for performance and importance by levels and types of duty assignments. Findings include comparisons of views of LPN's, RN supervisors, and Aides employed

in the same areas. In both states LPN's were performing a wide range of nursing functions and nursing roles, both with high levels of responsibility.

Detailed analyses were made to identify operational roles and relationships in the employment situation for re-evaluation of curriculums in educational programs and role expectancies of practical nurses.

The total Study is concerned with determining the nature of the population of licensed practical nurses, their employment patterns and preferences, the recruitment and selection of student of practical nursing and the programs through which they are prepared. This Study includes individuals, programs, and employment settings in the states of Illinois and Iowa.

The research design utilized provided a random sample of the actual employment locations and licensed practical nurses for the U. S. O. E. Study also provided useful, descriptive material for a profile of practical nursing in the states of Illinois and Iowa. A proposal was negotiated between the College of Education, University of Illinois, and the Research Coordinating Unit of the Illinois Board of Vocational Education and Rehabilitation and the Iowa Department of Public Instruction, Research Coordinating Unit of Vocational Education, making the finances available for the sub-investigations and subsequent reports: Practical Nursing in Illinois: A Profile and A Study of Practical Nurses Who Have Been Licensed in Iowa But Are Not Presently Employed as Practical Nurses, and Practical Nursing in Iowa: A Profile.

A ten per cent sample of all persons who ever obtained a practical nurse license in Illinois and Iowa was obtained from the licensure agencies in the states of Illinois and Iowa. The records from which these data were obtained gave information relative to the residence, education, age, and other factors of the personal, social type. From the ten per cent sample, a sub-sample of all persons who were residents of the states of Illinois and Iowa, licensed following an education program with licenses in good standing in 1965 were contacted in order to ascertain their present status as a licensed practical nurse. These data were obtained during the period, July - September 1965, and along with information concerning the additional persons licensed prior to January 1, 1966 provide the preliminary data for this report and previous reports mentioned above.

Other contemplated reports of the Research Project will consist of the following:

Third Report: An Analysis of Selected Educational Programs for Practical Nursing.

Data have been collected and are being analyzed on curriculum components, sequence, empahsis, and change as well as faculty preparation, work experience, and administrative structure. Public and private programs are included.

Fourth Report: Background, Characteristics, and Success of Practical Nursing Applicants, Students, and Graduates.

Data concerning the selection criteria, standardized tests, and other personal and educational data have been obtained from forty-five programs in operation in the states of Iowa and Illinois during 1966-67. Analysis will include data from applicants who did not enroll as well as drop-outs.

Fifth Report: Summary of the Practical Nursing Study.

This report will encompass the major findings of the total project as revealed by cross-analysis of data from the employed PN's,applicants, students, drop-outs, and the educational programs. With each sub-report being devoted to a particular area, the final report will study and report the interaction of characteristics and variables. This Study should provide recommended guidelines for student recruitment, selection, and prediction schemes; analysis of employment patterns and functions should provide a base for curriculum re-evaluation.

ACKNOWLEDGEMENTS

A Study of this type requires the interest, support, and cooperative effort of numerous individuals, groups and agencies. All concerned have been most helpful and made contributions that were essential to the successful completion of this Report.

The Project Director wishes to give special recognition to contributions of the hundreds of licensed practical nurses, professional nurses and aides who provided information, the employers (hospitals, nursing homes, clinics, health agencies and others) who provided released time and personnel for the substance of this Phase.

Appreciation is expressed to the coordinators and faculty of local practical nursing programs, state and local practical nurse associations, the Professional Advisory Committees for the Practical Nursing Study, and many other individuals and groups.

Recognition and appreciation is due in particular to the following who have been most helpful:

Illinois Department of Registration and Education
Mr. John C. Watson, Director.
Agnes Patton, Secretary, Illinois Committee of Nurse Examiners.

Illinois Division of Vocational and Technical Education
Vernon E. Burgener, Director, Research Coordinating Unit.
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Illinois Hospital Association
David M. Kinzer, Executive Director.
David W. Stickeny, Associate Director.

Licensed Practical Nurse Association of Illinois, Inc.

Iowa Department of Public Instruction
Vocational Branch, Research Coordinating Unit.

Iowa Board of Nursing
Vera Sage, Executive Secretary (since retired).

Licensed Practical Nurse Association of Iowa, Inc.

The project is indeed grateful to Dr. William J. Schill, Co-Director during the first year of the Practical Nursing Study, who was instrumental in developing this Phase as well as guiding the collection of the data herein reported. The foundation for the research design and the functional analysis

of LPN's duties were founded on the concepts of occupational careers of employed groups and Q-sort techniques in his previous studies.

A special note of appreciation to Elizabeth E. Kerr, Director, Program in Health Occupations Education and Associate Research Investigator of the Practical Nursing Study and members of the University of Iowa staff for their assistance in the development of the Study as well as suggestions for analysis and interpretation. Mr. William Griffith and Miss Carole B. Hoadley, both Research Associates at the University of Iowa, did an admirable job of conducting the interviews at the Iowa employment locations. Additional staff members in Iowa who contributed to the design, data collection and analysis include Mildred Freel, Dale Petersen, and Ronald Czaja.

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The research staff employed in the preparation of the instruments on the data collection and data analysis performed above and beyond the call of their assigrment. Mr. Warren Suzuki, Research Associate, also was dedicated to the interviewing and was of considerable value in preparing and facilitating the data analysis. Mr. John F. Huck, Research Associate, and Conard L. White, Research Assistant, in addition to helping with the interviewing, were responsible for the data control. Mr. Clarence Ash, Research Associate, assisted in the interviewing and supported administrative activity required for the Study.

Analysis, interpretation, and writing was completed by three research staff members. Mrs. Lois Hindhede, RN, Research Associate who earlier was very dedicated to interviewing and also was a distinct value in preparation of card-sort items. Dr. Larry J. Bailey, Research Associate, who performed additional statistical analysis and guided interpretations of the data. Mrs. Lois Langdon, RN, Education Specialist, assisted in interpretation and writings.

Illinois research assistants who contributed at various stages of the data collection and analysis included:

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Mrs. Bonnie Poulos, Sharon Stevens, and Rose Watts were employed in the office and are by and large responsible for the preparation, typing, and duplication of the many forms and instruments and the typing of this report. The secretarial assistance of Linda Forbes, Carma Grout, and Dianna Reid aided the Iowa team in their endeavors to maintain communication and flow of data to the Illinois staff.

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January, 1969

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CHAPTER I

INTRODUCTION AND BACKGROUND

This publication is the first of a series to report the results of research findings and related materials developed from an USOE funded project entitled An Integrated, Longitudinal Study of Practical Nursing. The Study is conceived to be a comprehensive approach to establishing the dimensions of the practical nursing field. Emergence of the practical nurse over relatively recent years has provided a new menber of the health team as well as a new career opportunity for many, mostly women.

Present practices and images are the result of earlier actions and events occasioned under a different set of circumstances. Future developments will be guided by impressions and judgements, based on available data at best. The primary purpose of the total Study is to develop a body of current data and to identify trends to provide the basis for sound judgements in planning future developments in practical nursing. Decisions on utilization of the data and findings in implementing educational program and employment performance changes will have to be determined by those competent to make judgements appropriate to the particular situation.

Overview and Objectives of the Study

In terms of demand for technical advances and personnel to use them, the health occupations are among those expanding most rapidly. The enlargement of training programs and the recruiting of students, however, have lagged seriously behind both past and current needs. As increases in population and greater needs for services continue to exceed the capacity of educational programs and the numbers of students enrolled, critical shortages will continue to exist and grow more intense. Hence, a study such as the present one is appropriate to describe conditions, assess the present status, and develop a profile of practical nursing. The results should be of significant value as a basis for predictions to be needed in later stages of educational and occupational planning.

Because rapid perfection of new techniques in the health fields and widening demands for more complete health services have led to recognition of many specialties, a wide-range of occupational choice exists today in this area. The interests

of potential students themselves, as well as of employers and the public require, however, that potential applicants be prepared for and employed at the highest feasible level of ability and practice, but not above their best assured competence.

Related Research and Background Information

The rapid and relatively recent expansion in educational programs for practical nursing has taken place in answer to an existing need and without the benefit of either sound or extensive supporting data or research findings. The professional associations in cooperation with interested governmental agencies have attempted to record developments in terms of numbers of programs, graduates, and employed personnel. Annual issues of Facts About Nursing by the American Nurses Association and State Approved Schools of Practical Nursing by the National League for Nursing have provided selected census-type data. Other studies have attempted to determine the role and functions of the practical nurse and criteria for practical nurse education programs(ANA, 1957, pp. 459-60). A number of surveys have been conducted in particular states (Univ. of Cal., 1959 and State of Wash., 1959) or regions (McGlothlin, 1956) in an attempt to describe the current or projected status of their programs. Pratically all of the above studies have been limited to a reporting by states and categorical data reported in tabular form as determined from questionnaires and official records.

Probably the most comprehensive survey (West, 1962) to obtain descriptive data relative to practical nursing programs was a joint undertaking by the National League for Nursing, the U. S. Office of Education, and the Public Health Service. The national survey provided a basis for developing self-improvement and evaluation procedures. No study has been found that attempts to evaluate and identify relationships between the major features of training and employment in this area although recommendations for such studies have been made. The Committee on the Questionnaire Study of Practical Nursing Schools recommended:

> "A longitudinal study of selected graduates of practical nursing programs. A study of applicants to practical nursing programs, including those who enroll and those who are rejected (West, 1962, p.7)."

The report of the Surgeon General's Consultant Group on Nursing (HEW, 1963) points out the great need for additional health service personnel and recommends broad studies, including recruitment, education and utilization of health service personnel.

Every program of practical nursing must depend upon some selection process; and, each must meet the minimum standards established by the appropriate agency in the state. At present, this is most often two years of high school, high school graduation, or an equivalency examination. The national survey of practical nurse programs (West, 1962, p. 30) reports that 78 percent of all schools use some selection test. The most commonly used test (31 percent of the programs) was the General Aptitude Test Battery developed by the U. S. Employment Service. The PACE, Pre-Admission and Classification Examination, has been found to be effective in predicting achievement test scores, but it is not adequate by itself (Hanson, 1955). The five-state regional study (McGlothlin, 1956, p. 10) reports that no state in the study felt it had been able to identify the factors which determine success in school or in practice. The problem of proper selection is a recurring topic at state and national meetings of practical nurse educators.

The California Study (Univ. of Cal., 1959) shows a higher dropout rate for the students with higher scores on achievement tests. Very often this occurred late in the program. The question of the "over-qualified" student has been raised by a number of persons in the field. Will they remain in the program or be satisfied to accept the duties within the limits of their training in employment?

Preliminary analysis of the Specialty Oriented Student data suggest that the degree of vocational maturity may be an important factor in both the selection of an occupationally oriented training program and the tendency to complete the training (Hoyt, 1963).

Van Trump (1961) studied the duties of practical nurses in general hospitals of Missouri. There was significant differences between the reports of practical nurses themselves and their professional nurse superiors relative to the duties performed by the practical nurse with patients at varying degrees of illness. His findings would indicate that the trained practical nurse was working with less and less direct supervision from a professional nurse and/or doctor. This situation would be contrary to most accepted statements of the role of the practical nurse. His study was conducted by questionnaire and a difference in interpretation could possibly account for some of the disparities. An interview approach should be better able to identify precise differences.

The card sort technique has been applied to nursing activities with success in research projects (Boyle, 1960 and Whiting, 1959). A more extensive use of the technique was used to study the functions performed and knowledges required in

performing a job with a high degree of success. Applications of the technique for curriculum development have been made (Schill, 1961 and 1965).

The majority of reports dealing with practical nursing and practical nurse training programs have been of the census and tabulating variety. Those surveys and reports of a descriptive nature have most often used a broad sample and a questionnaire approach. The Career Pattern Study by the National League for nursing is of this type. The present Study approached the problem in depth through extensive data collection devices and personnel interviews in an attempt to discover and define meaningful relationships.

An important question in any study of this type is the extent to which the results may be generalized to other similar groups and populations. There are sufficient commonalities across a large number of states with regard to legal requirements for practical nurse education programs and licensure to reasonably expect the findings of this Study to have significant implications for a large number of states, programs, and students. Practical considerations of time and distance determined that the geographic area to be included must be restricted. The geographic limitation should not invalidate the value of the Study.

While no claim is made that results from this Study will be generalizable to all training programs, several activities designed to provide clues regarding the reasonableness of others doing so were carried out. The use of standardized measures and instruments already tested in other studies provided a means of assessing the degree of similarity to be found in the various samples selected for study where a very high degree of similarity is found, some may wish to infer a greater generalizability.

The two States selected for study are not using a standardized course of study as is the situation in many states. Assistance and direction are given to each program and the instructors as a group in each State through teacher educators and state consultants through both individual and group sessions. Under these conditions it would seem reasonable to expect that differences in individual educational backgrounds of instructors will be reflected in each curriculum. Similar influences may be present in the various subtest scores of the standardized achievement tests and licensure examination. If these variables operate where individual freedom is permitted, they may also operate in contradiction to a standardized curriculum.

The use of outside, trained personnel to perform all data collection was designed to provide more objective and frank answers than could be provided by having co-workers or supervisors perform this task. Also, the personal interview made it possible to obtain a more refined answer and proper coding than would have been possible by questionnaire. The use of the Q-sort provides an element of forced choice decisions which can provide more accurate discrimination than the open end "check" scale often used.

Objectives

The long-range goal of the Study is the improvement of nursing service through the improvement of the selection process, educational programs (including curriculum and the instructional staff) and better utilization of prepared personnel. This Study will not attempt to implement changes, but will provide new knowledges and relationships in a meaningful manner that may be applied by those directly responsible for preparing practical nurses and utilizing their services.

The general hypothesis of the Study is that there exist differential and identifiable characteristics among potential and actual students, in approved programs themselves and the employment situations, and that meaningful relationships among these characteristics can be determined. Findings from an investigation of these characteristics and the relationships among them should serve to improve the quantity and quality of available nursing services.

The complete Study involves three somewhat independent but closely related and interdependent Phases. Each Phase was concerned with general objectives and a series of sub-objectives to establish the major characteristics, trends, and relationships of that particular Phase plus providing data and measures to be utilized in comparative analyses with the other Phases. Research design and procedures utilized concurrent data collection by research teams in each State following instrument development, pilot testing and staff training sessions.

Foundation Phase. A Study of all persons, through a 10% sample, that have ever been issued a license to practice practical nursing in Iowa and Illinois with particular emphasis on those who have obtained their license following completion of an approved educational program.

TO: Identify the personal, social, educational, demographic, and employment characteristics and trends of the current population of licensed practical nurses.

Basic data were obtained from the records of the Illinois Department of Registration and Education and the Iowa Board of Nursing, the official licensing agency in the respective State. Additional data were obtained through follow-up procedures to all persons who had an active license for the 1966 licensure year, were residents of the State at their last renewal and who had been licensed on the basis of completing an approved practical nursing educational program and examination.

The Foundation Phase was carried out with independent responsibility in each State under separate funding arrangements. The Research Coordinating Unit, Division of Vocational Education, Iowa Department of Public Instruction, and the University of Iowa, Program in Health Occupations Education, Division of Medical Services jointly supported the Iowa Study; and, the Research Coordinating Unit, Division of Vocational and Technical Education, Board of Vocational Education and Rehabilitation, and the University of Illinois, Department of Vocational and Technical Education, College of Education jointly supported the Illinois Study. In addition to providing results within its own objectives, these Studies established an estimated population of employment locations for utilization in Phase I. A summary of the results of this Phase is presented in this report, Chapter II. More complete reports of the Foundation Phase studies have been published as: Practical Nursing in Illinois: A Profile; Iowa Practical Nursing Sub-Study; and Practical Nursing in Iowa: A Profile.

Phase I. A Study of a selected sample of currently employed practical nurses in representative employment locations through personal interviews.

TO: Identify the occupational patterns, functions performed, and level of responsibility for performing the functions according to type of employment.

Phase I activities and findings provide the basis of this report of the specific factors and characteristics of employed practical nurses, their employment situations, activities performed in various settings and services, reasons for employment choices and moves, and inter-relationships of these characteristics.

Phase II. A study of practical nursing education programs (their faculty, policies, and curriculum), and the applicants, students, and graduates of these programs.

TO: 1) determine the characteristics of the programs of practical nursing and those criteria related to student success and employment of their graduates;

2) determine the characteristics of applicants, students, drop-outs; and and graduates of the selected programs and their relationship to each other.

Phase II procedures and findings will be reported in two later reports:

An Analysis of Selected Education Programs for Practical Nursing, based on data concerning curriculum components, sequence, emphasis and change as well as faculty preparation, occupational experiences and administrative characteristics.

Background, Characteristics and Success of Practical Nursing Applicants, Students, and Graduates.

Data were obtained at forty-five cooperating practical nursing education programs who admitted approximately 1800 students to the criterion class selected on the basis of this Study. Analysis will include data from applicants who did not enroll as well as drop-outs.

A final report, Summary and Final Report of the Practical Nursing Study, will also be prepared.

This report will encompass the major findings of the total project as revealed by cross-analyses of data from the employed PN's, applicants, students, drop-outs, and the educational programs. With each sub-report being devoted to a particular area, the final report will study and report the interaction of characteristics and variables. This Study should provide recommended guidelines for student recruitment, selection, and prediction schemes; analysis of employment patterns and functions should provide a base for curriculum re-evaluation.

Development of Practical Nursing

In the 20th century, practical nursing has made an historic transition from simple, untrained home care to full, legally-responsible membership on the health team. At the same time, a major shift from elementary and informal instruction by religious orders or charitable agencies to state-approved formal education-training programs has resulted from increasing public interest and concern with health services. Expanded population and needs, improved techniques and broader service coverage, womanpower shortages following World Wars I and II, and a national policy aimed at full employment and maximum use of human resources have all contributed to this development.

Support of training programs by vocational funds, employment of practical nurses by federal institutions, greater numbers of approved programs with licensed graduates, and increased recognition by professional nursing organizations have helped define the present occupational status. The identity, legal recognition,

and educational preparation for practical nursing have been evolving gradually since 1900, but especially rapidly since 1940. Despite this steady growth in recognition, the precise role of the PN is only now being defined, surprisingly late considering the demonstrated potential of this dedicated occupational group.

Factors contributing to the growth of practical nursing have been the emergence of the auxiliary worker to the institutional scene, war-time crises, the lag in increasing numbers of professional nurse graduates, and the expanding health needs of the public. Now at a crossroads of its development and responding to new concepts of education, nursing is harassed by feelings of urgency to supply greater numbers of quality graduates at all levels.

Prime areas of concern for professional and practical nurse programs are shortages of faculty with degrees and qualifications, restrictions imposed by state regulations, the reluctance of professional associations to make changes and the limited facilities available for educating more nurses.

From 1951 through 1965, there has been a rapid increase in the number of approved schools of practical nursing with significant additions to the total corps of licensed practical nurses. While numbers can measure in part the current supply and future potential, such factors as age-range of the present PN population, employment patterns, reasons for work and non-work, and the relationship of family responsibilities to work intentions outline a profile of the practical nurse population and more accurately define this work force.

Throughout the country there are relatively uniform practical nurse provisions and educational programs to prepare practical nurses. All fifty states and the territories now provide for licensure of this practitioner. Legislation and procedures for the approval of educational programs have been established. Presently there are over 1000 approved, practical nurse education programs from which new licensees have graduated.

Since the Smith-Hughes Act of 1917, the Federal Vocational Education Acts have provided grant-in-aid funds to the states through their State Boards of Vocational Education. The majority of these funds has been matched several times over by state and local funds for the operation of occupationally oriented educational programs. A few local practical nursing education programs were partially supported with funds from the Trades and Industies allocation in the early years of the Acts.

Probably the greatest single stimulus to the development of practical nursing came, however, with the passage of the Health Amendments Act of 1956 (P. L. -84-911) as Title II of the 1946 George-Barden Act. Great concern had developed over adequacy of health-care personnel. The developing practical nurse programs had attracted widespread interest and support as a means of helping to meet the need. Also, many states had passed licensure laws for practical nursing and found training facilities inadequate.

During the Congressional hearings on the Bill, considerable discussion centered on whether the funds should be allocated to and administered by the U. S. Public Health Service or the U. S. Office of Education. The decision was finally made to channel the funds through the existing federal-state-local cooperative arrangement already established for vocational education. A measure of success could also be predicted on the basis that a number of practical nurse programs were already in operation within this structure.

With passage of the Vocational Education Act of 1963 (P.L. -88-210), a milestone was reached in federal vocational education legislation. This Act authorized appropriations of up to $225,000,000 annually for occupationally-oriented programs of all types except for those..." generally considered professional or as requiring a baccalaureate or higher degree." Funds provided by this Act are not tied to occupational categories and within broad guidelines may be used by the states as they see fit. Practically any amount of the state's funds may be used for health occupations education.

A rapid expansion of existing programs and initiation of new types of programs across the health occupations field has been stimulated under the increased vocational funds. Hearings of the General Sub-Committee on Education, U. S. House of Representatives, 90th U. S. Congress have recommended a significant increase in funds for health-occupations education, including practical nursing. Representative C. D. Perkins introduced legislation to authorize the increase funds during the first session and Congressman Roman C. Pucinski, the Sub-Committee Chairman during the second session has continued the request. The only known opposition to this legislation has been from representatives of professional nursing associations.

Nursing in the twentieth centry has been characterized by higher standards developed by the profession and the various state Boards or Committees or Nursing, representing the public and spelling out additional definitions and requirements through legislation. The first departure from traditional nursing was the legal

recognition of the occupation of practical nursing. From initial licensure legislation there has been a gradual expansion in the number of schools, graduates, and total of licensed practical nurses. Further, changes in the State Nursing Act have broadened the scope of practical nursing as well as incorporating several provisions to upgrade the vocation.

Still, each state is faced with a shortage of skilled nurses, with reported vacancies in employing health agencies plus unfilled faculty positions in all nursing education programs. This situation is not likely to be greatly changed in the immediate future, especially at the professional level. Modification in the traditional three-year diploma, the associate degree, and the two-year diploma programs have not yet produced increased numbers of graduates at the registered nurse level.

Even to maintain the nurse to population ratio, present educational programs will have to be continued while new ones are being added. Until now, losses in programs terminated or closed have outweighed or nearly balanced gains from new programs. At present, the only hope for improving the low nurse-to-population ratio is the practical nurse. She not only has been assuming an increasing part of the patient-care load, but is the only one of the nursing group who can be prepared in sufficient numbers and in a short enough period to have any great effect on nurse supply.

Public Education and the Health Occupations

The need for formal education to prepare health-service workers has been increasingly recognized. It is now agreed that this training must be provided in quality programs administered by agencies firmly committed to education, including hospitals, junior colleges, and publicly sponsored adult-instruction units. Many such programs have been set up successfully on the basis of local needs or to meet local expectations.

In most cases, however, new programs have been of types already tried in other places and adapted or modified from available curricula, too often without a comprehensive investigation to define local and special needs. Seldom has attention been given to evaluating the total program in terms of overall quality, effectiveness in meeting needs, and optimum utilization of staff and facilities.

Such uncoordinated activities have led to fragmentation of programs and duplication of effort and have not generally contributed to the orderly and imaginative development of education for the health occupations. It is surprising, though fortunate, that needs have been met as well as they have, and that existing programs are generally of good quality. This has been true despite limited resources at local, area, state, and regional levels.

Responsibility for over-all development has traditionally been carried to various degrees and with little or no cooperation by competing agencies, institutions, professional associations, and individuals. Roles have emerged from traditional practices, appear to be somewhat institutionalized, and reflect their own areas of specialization. Changing patterns indicate, however, that these traditional roles are undergoing re-examination and modification in order to meet needs more effectively.

Current studies have been initiated to compare social, governmental, and individual investments in education with the return on these investments for society and the individual. As educational programs at all levels seek a progressively larger share of available public resources, many searching and pressing questions arise, especially those of priorities in allocation of public funds. To date, very few cost-analysis studies have been attempted to find the most beneficial or economical use of public education funds in terms of personnel prepared for health services. Based on principles established in other areas and the few studies in this field, indications are that a broader and more comprehensive program would offer a far more efficient approach.

In recent years, changes in the demands on the public education system have been extreme. Society expects this system to provide appropriate educational programs for people of all ages, levels of ability, and interests. In an attempt to meet this expectation, significant shifts in organizational structure and marked expansion in types of educational programs are under way.

Public colleges and universities have long provided occupational preparation for the health professions at the baccalaureate and higher-degree levels. A similar obligation to provide preparation at less-than-professional levels for the great majority of our young people and adults is now being recognized. Evidence indicates a steadily increasing trend to move occupationally-oriented programs under the administration of public educational institutions. A number of these are preparatory curricula offered in parallel to the first year or two of college; others, usually of shorter duration, are for retraining or upgrading.

Current Shift in Orientation for Health-Occupations Education. There is, in short, a trend to shift health-occupations education from service institutions such as hospitals, clinics, or other health agencies to area or regional educational institutions such as comprehensive community colleges or vocational schools. Simultaneously, there has been a basic change in philosophy, that of charging educational costs to institutions supported by the public education tax base. Traditionally, programs to prepare health-occupations personnel had emerged in service institutions with education in a subordinate role. Costs of such programs were necessarily included as service charges borne by patients.

Many programs operated by service institutions have now been discontinued because of financial pressures in meeting higher costs with limited budgets and reasonable, patient charges. Also, the mobility of our present work force precludes or makes difficult the retention of those trained in a particular institution long enough to return services commensurate with the investment. Shifting the cost to a broad educational base therefore seems appropriate.

Additional advantages support this trend to primarily educational institutions. With broader, interrelated programs, overhead and administrative costs can be reduced. With proper guidance, too, the potentially much larger pool of recruits will provide a steady flow of qualified applicants. Finally, the socially-accepted objective of "going to college" can be realized. The status-enhancement derived from attending a purely educational type of institution, rather than a service-oriented one, in all probability will increase enrollment.

Multiple-Agency Involvement. Many public and private agencies are involved in various aspects of health-occupations education, but no structure has existed to coordinate their activities. One example of the problem is sources of funds. These come from federal vocational education acts through state departments of education, directly from the U. S. Public Health Service, through state departments of public health, and from both public and private health organizations. The U. S. Department of Labor and the Office of Economic Opportunity also provide funds for research, service, and training in the field of health-occupations. Foundations, such as Kellogg, have also been active in supporting research projects and other activities to implement surveys and assist training to help meet health-service needs. Often the monies used for a single program may come from several sources, depending upon such factors as type of training or type of institution.

Health Workers in a Service Economy. In 1952, the U. S. Labor Force for the first time reached the point where there were more persons employed in the service occupations than in production. This trend has continued until today two out of three persons are employed in services rather than in goods-producing. From 1950 to 1960, manpower in the service area increased by a full 50 percent. Health-service areas have been among the fastest-growing, if not the fastest, of industries in this country (Dept. of Labor-Dept. of HEW, 1966, p. 16). Another comparison will help to show the magnitude of this growth: the increase in the number of persons employed in health areas from 1950 to 1960 was greater than the total number employed in the entire automobile manufacturing industry in either 1950 or 1960.

A composite prediction of needs in the health services came from the Surgeon General in February, 1966: 10,000 additional trained and qualified workers will be needed each month, 120,000 per year, for each of the next ten years to meet minimum requirements. Although concern has been expressed for all levels of training, the greater problem is providing adequate numbers of health-team support workers and auxiliary personnel who require training below the baccalaureate level (U. S.Dept of Labor-Dept. of HEW, 1966, pp. 14-17).

In "Manpower in a Service Economy," Mr. Eli Ginzberg, Director of Human Resources, Columbia University, identifies some general dimensions of a service economy which have important implications for education and employment of health-service workers:

> First, the services tend to use more highly trained people than does production.
>
> Second, the question of access to education and training therefore becomes a crucial matter.
>
> Third, because of rapid technological progress there is also rapid skill obsolescence, which in turn means that one can never train just for entry.
>
> The next proposition is that, other things being equal, the more education a person has initially, the more likely he is to remain attached to the field in which he enters.
>
> The next is that the service field has a high proportion of women, who continue to have certain special characteristics. Among the most important of these is to be educated and trained at a time different from men; their attachment to the labor-force is different in that they prefer increasingly to work part-time or part-year; and they enter, leave, and return to the labor-force differently from men.

> Finally, unless the education and training structure of the health field is correctly rooted in the general occupation and training structure of the community at large, it will never do the job.
>
> ...one of the great difficulties in the health field stems from the fact that hospitals were never meant to be educational institutions...we must work out a much closer alignment between training of health manpower and the needs of educational and training facilities (Dept. of Labor-Dept. of HEW, 1966, pp. 17-18).

Past and projected increasing percentages of the total labor force devoted to the health service area have been parallel to similar increases in the proportionate number of women in the total labor force. While in 1960 women made up only 32.2% of this group, by 1965 the percentage had increased to 34 and projections suggest a slower increase to 35.1% in 1970, 35.6% in 1975, and 36.9% in 1980. Also, rates of increase and participation differ for white and non-white women 14 years and over.

Non-white women in this group had a labor-force participation-rate of approximately 45% from 1960 through 1965 and will continue at approximately this rate; white women were expected to increase their participation from 35% in 1960 to 40% in 1980. In the past the non-white group has consistently displayed a higher labor-force participation rate than white, but the above projections point to a convergence.

In addition, total percentages given above do not reflect significant shifts within age groups. Nearly half of the projected increase in the entire labor force between 1965 and 1970 will occur among workers 14 to 24 years old, though after 1970 the increase will not be great. During the 1970's non-white workers especially will increase in numbersat almost twice the rate of young white workers (U. S. Dept of Labor, 1966, A, pp. 965-71).

Shifts in the educational patterns of women and in the numbers making up the various age groups will tend to cause a corresponding shift in the make-up of potential health-service workers and student groups for health-service education programs. The most notable shift will probably be to younger workers and students, with those positions requiring the least education and for which training is usually conducted on-the-job most affected.

Recruitment will probably shift from direct employment to enrollment first in educational programs and then employment. Hence, health-service education will have to develop close working relationships with health-service institutions.

Many experiences cannot be simulated in a separate educational institution, but must be provided through a working agreement. Also, two studies have indicated that approximately three-fourths of the graduates from practical nursing programs who learned under a cooperative arrangement tended to be employed by a cooperating clinical institution and to remain in positions there.

Developments in the Health-Occupations. As ever-increasing demands are placed on professional health personnel and new equipment and procedures are developed, some relatively routine functions and selected, specialized activities must be reassigned to supporting personnel with allied-medical or semi-professional backgrounds and training. Under such circumstances supportive personnel range all the way from the relatively new physician's assistant to ward clerks or others who need only short-term, on-the-job training. In the "Health Career Guidebook," the National Health Council has identified a total of 200 occupations. The recent Allied Health Professions Act identifies eleven different areas for preparation at the baccalaureate level, some involving knowledge outside the health field. Technologists in nuclear medicine, pharmacy, dietetics, surgery, inhalation therapy, and many others now perform functions formerly reserved for the nurse or physician.

As a result, the U. S. Public Health Service and professional organizations such as the American Hospital Association are devoting increased effort to develop methodologies and indices useful in studying the present supply of trained technicians, anticipated needs, and emerging specialties which will require training. The present practice of utilizing "the best available" when appropriately prepared people are not at hand has further complicated description of types of vacancies and training needs though many of the professional associations have tried to define trends and needs in their own areas.

The development and utilization of supporting personnel is, of course, broader than nursing and medical care alone. Examples of other similar occupations include dental assistant, dental laboratory assistant, dental hygienist, office medical assistant, optometric assistant, physical therapy assistant, occupational therapy assistant, veterinarian assistant, medical illustrator, x-ray technician, and operating-room or surgical technician.

Precise estimates of the numbers of persons enrolled in or completing many of the health-occupation programs are difficult, much more so than in such fields as nursing, where schools must be approved and licensure is required. Related

figures may be easier: for example, from 1941 to 1962 there was a 300% increase in non-professional nursing personnel in U. S. hospitals (U. S. Dept. of HEW, 1966, A, p. 83). One estimate of the numbers enrolled in formal education programs offered in hospitals, 300,000 at any one time, was made by Dr. E. L. Crosby, Director of American Hospital Association, in his 1964 presidential address to the National Health Council.

Preliminary data for fiscal 1966 developed by the Health Occupations Unit, Division of Vocational and Technical Education, U. S. Office of Education, indicate that over 88,000 persons were enrolled in health-occupations education programs supported at least in part with funds provided by the Federal Vocational Education Acts. The majority of all these enrollments were in the nursing field; 4,160 in associate degree programs for professional nursing, 47,322 in practical or vocational nursing, and 14,202 in nurse-aide programs. In earlier years, significant numbers had been prepared as practical nurses and nurse-aides, but the 26,700 increase in newer areas represents a significant change.

National Supply and Needs for Nursing Personnel. A severe shortage both in quantity and quality of nurses exists at all levels while the demand for nursing services continues to increase. Rising rates of hospitalization, growth in public and voluntary health agencies, rapid advances in medical-health sciences and increased employment of nurses in other health-occupations are causal factors in rising demand. The problem will become more pressing by 1970 as the birth rate rises, burgeoning the population. Higher general incomes and increases in numbers of the aged with susceptibility to long-term illness both promote preventive medicine and a greater utilization of health services.

The annual survey of educational preparation for nursing conducted by Nursing Outlook (Sept., 1966, pp. 48-49) shows the trends, numbers of programs, admissions, and graduates for the period 1956-57 through 1964-65. The tables of graduates from all basic programs preparing for beginning positions in nursing show that in 1956-57, 8.5% completed the baccalaureate program, 64.5% the diploma program, 0.7% the associate degree program, and 26.2% the practical nursing program. By 1964-65, these percentages had changed to 9.1% baccalaureate, 45.4% diploma, 4.3% associate degree, and 41.2% practical nursing.

Licensed Practical Nurses. Probably the greatest single change in the nursing field is the emerging role of the well-prepared, licensed practical nurse as a member of the health-service team. Only in recent years have educational

programs for practical nurses obtained maturity and stability. As with any new and rapidly expanding group, a great amount of confusion and misunderstanding of the practical nurse role has prevailed within the occupation itself, among related occupations, and with the general public. Nevertheless, the ratio of practical to professional nurses has been increasing consistently with the expansion of practical nursing programs versus the relatively stable number of professional nurse graduates.

In 1964 an American Hospital Association Survey indicated a ratio of three professional nurses to every practical nurse employed in hospitals (ANA, 1966, p. 167). In the same year, the National Center for Health Statistics collected data on employment of licensed practical nurses and professional nurses in nursing homes. In the spring of 1964, there were 20,500 licensed practical nurses, 120,000 nurse's aides, and 17,400 registered nurses reported employed in nursing homes, a ratio of approximately one practical to each professional nurse and six nurse's aides.

A most rapid increase in preparation for practical nurses has already occurred within the nursing field. In 1900 the U. S. Census counted 109,000 "practical nurses and midwives" in the United States which included many informally-prepared and untrained persons. In 1960, by contrast, the U. S. Public Health Service (Dept. of HEW, 1966, p. 72) reported 250,000 active practical nurses in census studies. Neither the percent nor the total number actively engaged in practical nursing can be determined with any degree of precision from either of the above figures. The 1960 census also reported that the proportion of non-white female practical nurses and midwives increased from 12.6% in 1950 to 17.0% in 1960 (Dept. of HEW, 1966, p. 72).

The recommended ratio between professional and practical nurses is one which has to be attained by consideration of patient requirement, efficiency, and cost. In the hospital climate, one study indicates that the highest patient satisfaction was attained with 50% care provided by registered nurses, 30% by licensed practicals, and 20% by nursing aides (U. S. Dept. of HEW, 1963, pp. 15-16). Other areas of the health fields may, however, require a different percentage of practical nurses.

Since the professional-practical nurse ratio varies with location and employment situations, it would appear that there is a wide range of acceptable nursing-care patterns, job specifications and expectations. Increases in need for nursing personnel and more stringent requirements for licensure have produced a corollary

need for higher-level educational programs. The changes in concept and functions of the practical nurse have been spelled out with definitions agreed to by both the National Federation of Licensed Practical Nurses and the American Nurses Association.

In these terms, it has been estimated that in 1966 there were budgeted vacancies for at least 75,000 professionals and 25,000 licensed practical nurses in United States hospitals and allied health institutions (U. S. Dept of Labor-Dept. of HEW, 1966, p.23), though determining actual vacancies is again difficult. Estimating on the basis of budgeted vacancies has serious limitations. Some hospital administrators will request funds for only slightly more positions than they consider they have a realistic possibility of filling even though their actual need is greater. In other cases, a certain number of personnel is budgeted and if professional nurses are not available, the posts may be filled with practical nurses or other personnel. The same procedure may then be followed for budgeted practical-nurse positions.

CHAPTER II

THE PRACTICAL NURSES OF ILLINOIS AND IOWA

This chapter is a summary of the procedures and findings of the Foundation Phase studies (Kerr 1967 and 1968; Tomlinson 1967) conducted independently in Iowa and Illinois and provides background and basic data for the later Phases.

After passage of legislation for licensure of practical nurses in 1949 in Iowa and in 1951 in Illinois, the Iowa Board of Nursing and the Illinois Department of Registration and Education (hereafter referred to as the Licensing Agencies) initiated procedures for approving schools of practical nursing, licensing individuals and renewing licenses on an annual basis. Applications required selected personal, social, and educational information. Since renewal is on an annual basis, the cummulative records provided a means of establishing changes over time. Permission and assistance of the Licensing Agencies made possible the obtaining of reliable data on the total population of LPN's who had ever been issued a license.

Initial licensure legislation in each State provided a two-year period during which those persons who could show the required evidence of competency and experience as practical nurses could obtain a license "by waiver," without the newly required education and examination. Such a provision is commonly known as a "grandfather clause" and utilized when new requirements are established in most fields. Large numbers of persons were issued a license under these provisions. Since that time the licensure examination has been given several times a year and may be taken by any qualified candidate at any session.

Data Collection Procedures

Utilization of official records was selected as the most comprehensive and accurate means of estimating the population of employed practical nurses and the employment locations of practical nurses. Attempting such an estimation from lists of hospitals, nursing homes, institutions, private duty registers, etc., would have required a major undertaking and provided inadequate coverage of clinics, private duty, industrial nursing, offices and other possible small or unusual locations.

Since license numbers had been issued in sequence in each State, selection of every tenth license number provided a representative, 10 percent sample for each year and for the total. A follow-up to each individual in the sample who met the selected criteria provided a sample population of all existing employment locations employing LPN's as well as providing basic, descriptive data for the total population of practical nurses in the two States.

Data Collection at the Licensing Agencies. Members of the Practical Nursing Study staff visited the offices of the Licensing Agencies and were assisted in obtaining data directly from the files. Official records were of the "hand-operated"type with established classifications; extra notations were often helpful in clarification of questions. Additionally, supervisory personnel in the offices had been responsible for the records for some years and could account for changes in information systems. Regular cross-checks were employed to maintain accuracy and uniformity. Data for the first years of licensure were sometimes less adequate and reliable than more recent data of particular interest in this Study.

During July and August, 1965, data were obtained for the 10% sample of all persons who had ever been issued a license at that time. A second data collection was conducted in January 1966 to extend the sample to include those persons licensed after July but prior to January. Through December 31, 1965, a total of 14,348 Illinois and 4,346 Iowa practical nurse licenses had been issued. Tables 2:1 and 2:2 provide licensure data by year for Illinois and Iowa respectively.

Initial Contact Questionnaire. The next step in establishing the sample of employment locations was the initial contact questionnaire. A brief phone or mail contact was made with each individual in the 10% sample group who had: an active license, completed an educational program, and had given a home address within the State, Illinois or Iowa, where licensed. The questionnaire asked whether or not she was employed and, if so, the name of the employer and her duty assignment. During September and October contact was attempted first by phone and then by mail. A similar follow-up procedure was initiated in January of 1966 for those who had been licensed between July and December 31, 1965. In these efforts, coordinators and other staff members of local practical nurse programs were most helpful in reaching their graduates.

TABLE 2.1: BASES FOR LICENSING PRACTICAL NURSES IN ILLINOIS, BY YEARS 1952-1965

YEAR	Examination	Waiver	Endorsement	Foreign Countries	Number with Preparation in Other States	Number Licenses Issued	Number Licenses Renewed	Cummulative Total Licenses Issued	Per cent Active Licenses (1)
1952	137	2476	0	-	20	2613	123	2613	(2)
1953	202	3100	24	-	24	3326	3181	5939	(2)
1954	284	230	29	4	25	543	5684	6482	96.1
1955	390	10	46	2	44	446	6195	6928	95.9
1956	369	10	57	4	53	436	6447	7364	93.5
1957	378	3	79	3	76	460	6770	7824	92.4
1958	393	4	89	1	88	486	7614	8310	97.5
1959	476	5	69	1	68	550	7473	8860	90.5
1960	540	0	107	1	106	647	7875	9507	89.6
1961	546	1	79	2	77	626	8284	10133	87.9
1962	636	5	102	1	101	743	8490	10876	84.9
1963	706	0	163	1	162	869	8894	11745	83.1
1964	1153	0	170	2	168	1323	9615	13068	83.7
1965	1079	0	201	5	196	1280	10424	14348	81.6
TOTAL	7289	5844	1215	27(3)	1208(3)	14348			
1966(4)	1325	1678	183	6	177	3186	10955	17534	80.6

(1) Number of licenses issued and renewed divided by cummulative total licenses issued.

(2) Not appropriate due to change in procedure

(3) Numbers included in examination, waiver, and endoreement.

(4) These data presented for information only; not included in the analyses or discussions of this Study

Compiled from information and reports issued by the Department of Registration and Education, including those to the American Nurses Association, 1952-65.

TABLE 2.2: BASES FOR LICENSING PRACTICAL NURSES IN IOWA BY YEARS, 1949-1966

July 1 to June 30	Number Writing Exam	Number Failing First Exam	Percent who Passed	No. of Repeaters Who Passed	No. of Lic. Issued	No. Endorsed from Other States	No. Endorsed to Other States	No. Licenses Renewed	Cumulative Total Licenses Issued	Percent with Active Licenses
49-50	345	19	94.2	3	325	2	0	--	327	--
50-51	1151	97	89.9	31	1035	2	0	327	1364	100.0
51-52	272	45	64.0	20	174	2	0	1356	1540	99.5
52-53	26	0	100.0	0	26	3	10	1512	1569	98.2
53-54	37	0	100.0	0	37	9	12	1541	1615	98.3
54-55	65	6	90.8	4	59	6	11	1541	1680	95.6
55-56	98	1	99.0	0	97	23	18	1586	1800	94.8
56-57	132	0	100.0	0	132	11	23	1672	1943	93.4
57-58	111	2	98.2	1	109	10	41	1759	2062	91.1
58-59	161	4	97.5	3	157	14	43	1841	2233	90.1
59-60	171	3	96.5	1	165	25	40	1963	2423	88.8
60-61	199	5	97.5	3	194	44	45	2063	2661	86.5
61-62	250	3	98.4	1	246	30	55	2316	2937	88.2
62-63	234	2	99.1	2	232	46	65	2503	3215	86.5
63-64	283	5	97.9	2	277	74	62	2729	3566	86.4
64-65	357	6	97.8	6	349	68	88	2754	3983	79.6
65-66	379	10	96.3	3	365	80	80	2980	4423	77.3
TOTAL	4271	208	93.2	80	3979	449	593	--	--	--

A total of 4346 licenses were issued through December 31, 1965.

To facilitate description and analysis, a three-variable classification, 1) currency of license, 2) place of current residence, and 3) qualification by education or experience, was established for all practical nurses in the sample. From combinations of the three variables, the following inclusive and mutually exclusive categories resulted:

CIED: Active standing, in-state residence, license by education.

COED; Active standing, out-of-state residence, license by education.

CIX: Active standing, in-state residence, license by experience.

COX: Active standing, out-of-state residence, license by experience.

IIED: Inactive standing, in-state residence, license by education.

IOED: Inactive standing, out-of-state residence, license by education.

IOX: Inactive standing, out-of-state residence, license by experience.

IIX: Inactive standing, in-state residence, license by experience.

Official records in Illinois and Iowa showed only 13 and 6 persons, respectively, known to be deceased. Consequently, they are shown in the appropriate inactive category in Table 2.3.

TABLE 2.3: STATUS OF ALL PRACTICAL NURSES LICENSED BY ILLINOIS AND IOWA AS OF 1965

	ILLINOIS		IOWA	
STATUS	NUMBER	PER CENT	NUMBER	PER CENT
Current License				
CIED	712	49.6	222	51.0
COED	51	3.6	34	7.9
CIX	372	25.9	82	18.9
COX	25	1.7	12	2.8
Sub-Total	1160	80.8	350	80.5
Inactive License				
IIED	56	3.9	26	6.0
IOED	25	1.7	17	3.9
IIX	172	12.0	34	7.9
IOX	22	1.6	8	1.8
Sub-Total	275	19.0	85	19.5
TOTAL	1435	100.0	435	100.0

At least partial information was obtained, either directly or from a close acquaintance, on all (222) persons in Iowa and from over 95% of all (712) Illinois LPN's in the CIED group. As might be expected, some persons had moved from the State after renewing their licenses for the 1966 licensure year. Responses to this questionnaire plus the data from the Licensing Agencies provided the basis for describing the nature of both the practical nurse and the employment location populations.

Employment Follow-Up. During July of 1966, all persons who had reported on the initial contact questionnaire that they were not employed, or were employed on a part-time basis, were sent an additional employment-information, follow-up questionnaire. A second mailing was sent a month later when needed. Final response rate was 80% for each State. Subjects were asked their employment history, reasons for employment or unemployment, and intent or wish to return to or to enter employment as a practical nurse.

This second follow-up questionnaire was more detailed as to their present employment situation, future employment plans, and reasons for their choice of employment plans. Information from the initial contact and the employment follow-up made possible descriptions of the employment patterns for all LPN's who had current licenses; and, consequently, were eligible for immediate employment.

The Practical Nurse Population

In each State a significant proportion (50% in Illinois and approximately 33% in Iowa) of all LPN's were persons issued a license to practice practical nursing through the "waiver" provisions in the first years of the licensure legislation. Although the number of practical nursing education programs and graduate LPN's have increased steadily since that time, a shortage, as measured by official studies and reported vacancies, exists in all areas of each State. This shortage is particularly apparent in the rural areas; also, the supply of LPN's is more closely related to the availability of an educational program than to the total population or extent of health institutions.

Although there are some evidences of a recent increase in male LPN's, the occupation continues to be predominately women, 98% of all licensees in each State.

LPN's in these States have a high tendency to maintain their license in good standing in the State where issued. In each State over 80% of all persons ever licensed as PN's had an active license in 1965, 67% of the waiver and 90% of those by education in Illinois, and 69% of the waiver and 86% of those by education in Iowa.

Personal Characteristics: There has been a continual decrease in the median age of LPN's in each State. Those licensed by waiver were an older group and they continue to provide a higher percentage of the LPN labor force in Iowa than in Illinois. In 1965, over 14.3% of the Iowa and 5.1% of the Illinois LPN's were 60 years and older, all but 1% in each State were licensed by waiver. However, Iowa has attracted a significantly younger group into the educational programs, 56.9% were licensed at less than 25 years of age while Illinois had only 26.5% in the same group (see Tables 2.4 and 2.5). Consequently, Iowa has a bimodal distribution of LPN's young LPN's (under 25 years) by education and older LPN's by waiver, while Illinois has a more skewed distribution of ages with both the waiver and education groups tending to be over 45 years of age. In 1965, median age at licensure had dropped to approximately 30 years in Illinois and below 25 years in Iowa.

A large part of the LPN's in Illinois were non-white females, born in the Southern States census region, who moved to Chicago prior to high school and practical nursing education. Another similar group moved to Chicago after obtaining an original practical nursing license out-of-Illinois. Non-whites comprise 26.5% of the total group licensed in Illinois during 1963-65, 77% of whom resided in Cook County (Chicago). This was a significantly higher proportion of non-white than in the State or city total population. Iowa had only 2.8% non-white in the total LPN population.

LPN's tend to be quite a stable group. Although Illinois has had a net gain of over 14% between in-migration and out-migration of LPN's, most LPN's attended a practical nursing education program in the same geographic area as their high school attendance and remained and worked in the same area. Iowa has not had a similar in-migration, but 84% of all LPN's ever licensed in Iowa had a current, or last known, address in the State. By geographic area, 75 to 90% of all LPN's resided in the same area as where they attended a practical nursing program. Exceptions to this ratio existed in some places where the LPN's resided in a rural area, attended a PN program in an adjacent metropolitan area and returned to the rural area; often school attendance was on a commuting basis. Some movement from a rural to an adjacent metropolitan area was also

TABLE 2.4: AGE OF LPN'S AT INITIAL LICENSURE BY METHOD OF LICENSURE
(Based on 10% Sample)

ILLINOIS

AGE	TOTAL		LICENSED BY EDUCATION		LICENSED BY EXPERIENCE	
	N	%	N	%	N	%
Less than 25	245	17.1	224	26.5	21	3.6
25-44	678	47.3	438	51.9	240	40.7
45 and over	511	35.6	182	21.6	329	55.7
Total	1434	100.0	844	100.0	590	100.0

IOWA

AGE	TOTAL		LICENSED BY EDUCATION		LICENSED BY EXPERIENCE	
	N	%	N	%	N	%
Less than 25	178	40.9	170	56.9	8	5.9
25-44	126	29.0	86	28.8	40	29.4
45 and over	131	30.1	43	14.3	88	64.7
Total	435	100.0	299	100.0	136	100.0

TABLE 2.5: CURRENT AGE (1965) OF LPN'S BY METHOD OF LICENSURE
(Based on 10% Sample)

ILLINOIS

AGE	TOTAL		LICENSED BY EDUCATION		LICENSED BY EXPERIENCE	
	N	%	N	%	N	%
Less than 25	130	9.1	130	15.4	0	0
25-44	490	34.2	415	49.2	75	12.7
45 and over	814	56.7	299	35.4	515	87.3
Total	1434	100.0	844	100.0	590	100.0

IOWA

AGE	TOTAL		LICENSED BY EDUCATION		LICENSED BY EXPERIENCE	
	N	%	N	%	N	%
Less than 25	101	23.2	101	33.8	0	0
25-44	144	33.1	129	43.1	15	11.0
45 and over	190	43.7	69	23.1	121	89.0
Total	435	100.0	299	100.0	136	100.0

noted. Sixty percent of the Iowa and just under 50% of the Illinois LPN's had not changed their addresses since initial licensure.

As might be expected with the decreasing age of LPN's, the educational level has increased. Sixty-one percent of the Illinois and 95% of the Iowa LPN's licensed by education have completed high school or the equivalent (GED). In July 1964, the Iowa Statutes were changed to require high school graduation or its equivalency for admission to an approved program. Illinois requires tenth grade completion. Two research studies in Iowa showed that women over 25 were more likely to complete the PN program and scored significantly higher on State Licensure Exams than high school graduates under 25 (Kerr, 1962 and 1968).

Employment. Employment and labor force data are based on those LPN's who had their license currently in good standing, gave a home address within the reference State for the 1966 licensure year and had been licensed following completion of an approved PN program, the CIED group. The subjects in Illinois represented: 49.6% of all persons ever licensed in the State, 61.4% of all LPN's with a license in good standing and 84.4% of all persons licensed on the basis of an education program. Respective percentages for the subjects in Iowa were 51.0, 63.4, and 74.2

A large majority of the CIED group was currently married, somewhat over 80%. The remainder of the group was approximately: single 6%, religious order less than 2%, and widowed, divorced or separated 11%.

Since renewing their license in May, approximately 3.5% of the Illinois and 6.8% of the Iowa LPN's had moved out of the respective States by the end of the year. Marriage was the most common reason; 67% of the Iowa LPN's gave this reason for leaving that State.

LPN's probably have the highest labor force participation rate in the occupation for which they were prepared of any occupational group, male or female. Across all age groups, 65.1% of the Illinois and 58.3% of the Iowa LPN's were employed full-time as LPN's while an additional 8% and 12%, respectively, were employed on a part-time basis. Evidence of the strong commitment to practical nursing is apparent by the fact that only 2% of the total group were employed in any other occupation, TABLE 2.6. Additionally, the drop in labor force participation during the child bearing ages was much less significant than that reported for many groups. In Illinois, the resident 25-29 year old group had 64.9% full-time and 6.4% part-time employed while the 30-34 age group had 67.5% and 9.5%, respectively. Those 60 years and over reported 62% full-time employment.

TABLE 2.6: EMPLOYMENT STATUS OF CIED GROUP AT INITIAL CONTACT

EMPLOYMENT STATUS	ILLINOIS N	ILLINOIS %	IOWA N	IOWA %
Deceased	2	0.3	0	0.0
In-State Residence				
Non-employed	130	19.2	46	20.8
F-T-Health Occupation	441	65.1	129	58.3
P-T-Health Occupation	54	8.0	28	12.7
Employed Non-Health Occupation	14	2.1	3	1.4
Employed Out-of-State F-T-Health	12	1.8	0	0.0
Out-of-State Residence				
Employed in Health Occupation	14	2.1	3	1.4
Non-Employed or Unknown	10	1.4	12	5.4
TOTAL RESPONDENTS	677	100.0	221	100.0
NON-RESPONDENTS TOTAL	35		1	
RESPONSE RATE		95.1		99.5

All LPN's who had reported that they were either non-employed or part-time employed were contacted again approximately eight months later. A relatively large proportion had maintained or increased their participation rate or had re-entered the labor force. Among the subjects in Illinois originally classified as part-time employed in a health occupation, 20.9% had become non-employed and 9.3% had taken full-time non-health jobs. Of the subjects originally classified as non-employed, 25.2% had entered or returned to the labor force as LPN's. In Iowa 29% of non-employed had returned to practical nursing, 10% full-time and 19% part-time; 12% were employed in health related and other occupations, and 59% remained unemployed.

This does not mean, however, that there was an increase in the total number of proportion of LPN's employed in health occupations. The same number of LPN's originally classified as full-time may have decreased their

participation or have left the labor force entirely during the follow-up period. Whether these drop-downs or drop-outs balance the increased participation by part-time and non-employed LPN's represents a question for further study.

The primary reason for non-employment was "family responsibilities" especially "young children in the home." Primary reasons given for desiring to return to work were "desire for contact outside the home" and "to supplement family income." Most intended to return to work as an LPN and over half within one year. Highest non-employment was among that group of LPN's licensed in Iowa on the basis of partial completion of a registered (professional) nurse program.

Types of Employment and Duties. Chapter III presents tables containing data relative to the control, service and bed capacity of the employment locations of the employed CIED group as the "population" from which the sample employment locations for interviews were selected. The largest single group was employed in general hospitals, 64.4% in Illinois and 68.4% in Iowa. Iowa's next largest service category, 17.4% employed in nursing homes and geriatric institutions, was Illinois' third largest category with 8.1%. Private duty comprised the second largest category in Illinois while only 1.9% were so employed in Iowa. The 7.1% employed in physician's offices in Iowa compares to one of Illinois' smaller employment categories of 2.8% (TABLE 3.1).

LPN's worked in employment locations of all sizes as determined by bed capacity; 16% of the Illinois and 9% of the Iowa LPN's were employed in situations (such as physician's office) where bed capacity was not an appropriate criteria (TABLE 3.3). The 29.7% employed in Illinois locations having 500 or more beds, compared to 12.3% in Iowa reflected a basic difference in institution size between the two States. Approximately 23% of the Illinois LPN's were employed where 200 to 400 bed capacities were maintained while Iowa had over 29% employed in locations of equivalent size. Another difference was that almost 25% of the Iowa LPN's worked in locations of 25 to 99 bed capacity while only 11% of the Illinois subjects were so employed. This difference is due to the smaller general hospitals in the rural areas and the higher percentage of Iowa LPN's employed in nursing homes.

Location of the employment locations, by rural and metropolitan areas, showed almost opposites for Illinois and Iowa; almost 60% of the LPN's in Iowa were employed in rural areas while over 50% of the LPN's in Illinois were employed in Cook County (Chicago). Only about 20% of the Illinois LPN's were employed

in rural areas. Des Moines is the largest metropolitan center in Iowa and employed 12.9% of the LPN's; Cedar Rapids is next with 10.3% (TABLE 3.4).

A higher percentage of the employment locations were operated by church or religious groups in Iowa than in Illinois, 31.6% and 21.6%, respectively. Conversely, proportionately more LPN's were employed at locations under the direction of non-profit groups in Illinois, 26.9%, to Iowa's 20.0%. More LPN's were engaged in individual employment in Illinois than Iowa while the reverse was traced for employment in proprietary locations. Several LPN's were employed as industrial nurses in Illinois while no employment of this type was found in the Iowa sample (TABLE 3.5).

Practical nurses were assigned to most duty areas within the employment locations of each State (TABLE 3.5). In some cases they were identified as "charge nurse" or "supervisor" of a unit or group. As might be expected the largest duty areas were the medical and surgical areas. Enough cases were identified to speculate that there is a trend toward providing additional types of assignments. Comments by physicians, professional nurse supervisors and administrators indicated that the long-term, full-time employment pattern of LPN's makes this shift in duties appropriate and desirable. Also, since no professional nurse education program exists in the southern 30 counties (of 102) in Illinois, the primary supply of nurses is from the LPN group.

Terms and Definitions

Terminology common and accepted in the nursing field will be used for this report. In addition to the terms defined below, a number of more specialized terms used in the research study will be described in later sections.

Nursing. "...one of the resources in a community for the care of the sick, the prevention of illness, and the promotion of health under medical authority. The distinctive function is close and individualized service to the patient, varying with his state of health from one of dependence, in which the nurse performs for him what he cannot do for himself, through supportive and rehabilitative care, physical and emotional, to self-direction. Nursing is primarily patient-centered. It gives service directly through treatment, general physical care, and health instruction to the patient and his family, and through the coordination of nursing with other community services essential to the patient's health needs." (NLN, 1961, p. 21.)

Registered Nurse. Graduate of an educational program in nursing who has been licensed to practice professional nursing by the appropriate authority in each state.

Professional nursing. "...performance for compensation of any act in the observation, care, and counsel of the ill, injured, or infirm, or in the maintenance of health and prevention of illness of others, or in the supervision and teaching of other personnel, or the administration of medications and treatments as prescribed by a licensed physician or dentist, requiring substantial specialized judgment and skill and based on knowledge and application of the principles of biological, physical, and social science. The foregoing should not be deemed to include acts of diagnosis or prescription of therapeutic or corrective measures." (NLN, 1965, Appendix II p.38).

Professional Nurse (RN) is used in this Study to refer to all persons who have a license to practice professional nursing. The American Nurses' Association has proposed (ANA, 1965, p.8) that the minimum preparation for professional nurses should be a baccalaureate degree and those RN's whose preparation is at less than the baccalaureate level should be known as technical nurses. "Technical nurse" is being used in some recent registered nursing association publications when reference is made to the RN who has completed a diploma or associate degree but not a baccalaureate curriculum.

Approximately 80% of all RN's, however, have received their basic preparation in diploma programs.

Licensed Practical Nurse (LPN) is a person who has been issued a license to engage in the practice of practical nursing by the appropriate authority in a state. In Texas and California a person holding an equivalent title and license is referred to as Licensed Vocational Nurse (LVN).

Practical Nursing. "...performance for compensation of selected acts in the care of the ill, injured, or infirm under the direction of a registered professional nurse, a licensed physician, or a licensed dentist; such acts would not require the substantial specialized skill, judgment, and knowledge of professional nursing."

Functions of the Licensed Practical Nurse (NLN, 1965, p.35) approved by the American Nurses' Association and the National Federation of Licensed Practical Nurse as:

> "The work of the LPN is an integral part of nursing. The licensed practical nurse gives nursing care under the supervision of the registered professional nurse or physician to patients in simple nursing situations. In more complex situations the licensed practical nurse functions as an assistant to the registered professional nurse."

Practical Nursing Program. "Usually one year in length, this curriculum is self-contained, complete, and satisfactory for its own purpose, preparing exclusively for practical nursing. Its objective is to train a worker who will share in giving direct care to patients. The practical nursing program is intended for individuals who will find satisfaction: 1) in nursing functions consistent with short-term preparation and 2) in practicing nursing within a limited range of situations for which patients require care.

A program leading to a certificate or diploma in practical nursing may be organized and operated under public education, hospital, or other community agencies. Most are administered through the public school system. The next largest number are controlled by hospitals. A few are under universities, colleges, and community agencies." (West, 1962, pp 1-10).

Licensed in Good Standing. After initial issuance the license remains in good standing unless revoked for "just cause" as outlined in State regulations. If not renewed for a period of five years, special application and procedures for restoration must be initiated.

Active, or Current License is used to designate either an initial license or one renewed for the current year, a valid license.

Inactive License. In good standing but not renewed for the current year, a non-valid license for the practice of professional or practical nursing.

Licensing Agencies. The legally established regulatory agency responsible for educational standards of practical nursing programs, students, licensure and practice. In Illinois, this authority is vested in the Department of Registration and Education; the Committee of Nurse Examiners (RN's) is advisory to this Department. The Board of Nursing is the comparable agency in Iowa.

State-Approved Practical Nursing Programs. Curricula accepted by the licensing agencies, or the appropriate agency in other states. Only graduates of approved programs are eligible for examination to become licensed practical nurses.

State Board Examination. A written test of competence administered by the licensing agency. Upon passing the examination, the individual is eligible for licensure as a practical nurse and may use the title "Licensed Practical Nurse."

Practical Nursing Study (PNS) is a 39-month research project being conducted from June 1965 through February 1969, An Integrated, Longitudinal Study of Practical Nursing, USOE Contract No. 5-85-038, by the University

of Illinois in cooperation with the University of Iowa. Funds were provided by the U. S. Office of Education under the Vocational Education Act of 1963, Section 4 (c).

Instate and out-of-state are terms used to indicate whether or not the residence of an individual, the place of employment, or the practical nurse education program was located within the State of Illinois or Iowa. In each case the reference is to the State where licensed. A few cases were counted separately in each State.

Geographic location refers to specific areas such as counties, groups of counties in Illinois or Iowa, regional groupings of states, or foreign countries.

Metropolitan areas refers to specific counties or groups of contiguous counties in Illinois or Iowa, each with a population of 100,000 or more people as defined in the 1960 U. S. Census.

For purposes of this Study, three modifications were made in Standard Metropolitan Statistical Area concepts used by the U. S. Census Bureau. First, only that part of a SMSA within each State was included in the data concerning that State. Second, Sangamon and Macon counties were grouped as a single Springfield-Decatur Metropolitan Area. Third, the Chicago Standard Metropolitan Statistical Area was renamed "Greater Chicago Metropolitan Area," and when greater discrimination was required, Cook County was considered separately with the five surrounding counties designated as Chicago Metropolitan Area.

Upper Rural and Southern Rural are designations given to groupings of non-metropolitan Illinois counties based on their geographic position in the State. Upper Rural includes approximately the northern two-thirds of Illinois. Southern Rural when used in reference to Iowa is approximately the three southern tiers of non-metropolitan counties, twenty-eight in total. East Central Rural is comprised of twenty-two non-metropolitan counties forming a trianglar area with the apex at Des Moines and the base along the Mississippi River. Nothern Rural consists of all rural counties, thirty-six, not included in the Southern and East Central areas.

Southern States represents the Southern Region of the United States as classified by the U. S. Census Bureau: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Current residence was established by the most recent address provided the Licensing Agencies by the individual LPN. For those with active licenses, the

address was provided at renewal, reinstatement, initial licensure or later by official change-of-address notice during the period May 1965 through December 1965. In those comparisons where LPN's with an inactive license are included, the most recent address recorded was considered current residence.

Employment status was determined by the extent of participation in the labor force as expressed quantitatively below:

1. Full-time: gainfully employed at least thirty hours per week.
2. Part-time: gainfully employed less than thirty hours per week.
3. Unemployed: not gainfully employed, but actively seeking employment.
4. Out-of-labor-force: not gainfully employed and not actively seeking employment.
5. Non-employed or not employed includes both the unemployed and those out-of-labor-force (3 and 4 above).

LPN employment is a classification including all positions where a practical nurse license is required and in a few cases employment in a non-nursing but medical or health occupation in which the knowledge, experience, and education commensurate with being an LPN may be highly desirable or an integral factor in holding the position.

Non-Health employment is a classification used to designate all employment other than as an LPN.

Employment location is defined as any institution, organization or position at which an LPN may enter and maintain gainful employment. Included are hospitals of all types and functions, nursing homes, clinics, doctor's offices, manufacturing concerns, and public health agencies. Each LPN engaged in private duty employment was considered to be a separate employment location. Therefore, both a general hospital that employs 300 LPN's and a single private-duty nurse were counted as single and separate employment locations.

SUMMARY

Practical nurse education programs have provided an indispensable member of the health service team that is making an unequaled return in actual patient care on the investment in her education. Macro labor force data and projections have serious limitations when applied to this group. Their employment level and labor force participation rates exceed other women with equivalent educational background

at each age category,and they are geographically stable in providing services to the area in which they attended an education program.

In short, contributions of the Illinois and Iowa surveys have been to accumulate data which show LPN's in the States, to be a stable, recognized and accepted, almost fully utilized segment of the health-services team. Recent students and graduates are younger with more background in general education than in earlier years. Specific formal education programs have largely replaced experience as a basis for certification. Nevertheless, older women have in general scored better on licensing examinations than their younger sisters. Because so few LPN's are unemployed in health services and because they work with such dedication close to the location of their education, little seemingly can be added to gain numbers from the group already trained and certified. This seems to imply, however, that more can be done with expanded facilities and programs with attractive descriptions of the occupation and its skilled status to assist informed first career decisions. Also helpful may be flexible admissions and programs to include married and older students, and with work schedules to accommodate and adapt to the occasional demands of employment interruptions for family and children.

Prime areas of concern for professional and practical nurse programs are shortages of faculty with degrees and qualifications, restrictions imposed by state regulations, the reluctance of professional associations to make changes and the limited facilities available for educating more nurses.

The feasibility of implementing the "career ladder" concept through achievement and proficiency evaluations should be explored as a means of obtaining both additional quality and quantity of prepared personnel at all levels with greater speed, efficiency, and flexibility. With the chronic shortages at all levels of skilled nursing personnel and with growing societal needs, such an exploration, at least on an investigatory and experimental base, should be both helpful and profitable.

Conclusions drawn from these responses include the following:

(1) LPN's seem to be welcomed in all sectors and types of health institutions. (2) Generally, they displayed a high health-related employment rate, with only short periods of part-time or non-employment status. Also, only a meager 2% of the readily-eligible LPN health force were employed in non-health jobs. (3) The primary

reason for LPN employment seems to be inner-direction, i.e., desire for and willingness to engage in human and helpful services. Non-employment for LPN's on the other hand, can be attributed to family responsibility; immediate inducements to employment under traditional hospital-oriented stimuli such as pay and changed scheduling do not seem to promise much change in employment participation.

CHAPTER III

SELECTION AND CHARACTERISTICS OF THE EMPLOYMENT LOCATIONS

Identification of the universe of LPN's utilized in this Study was a relatively simple matter. The Licensing Agency in each State maintains a record of all persons ever licensed and current records of those in good standing. A 10% of this universe provided an estimate of the population of all persons ever licensed. A further follow-up to all persons in the 10% sample who had their license Currently in good standing (1965), were residents In the reference State at their last renewal, and who had been licensed following an Educational program (the CIED group) asking for their place of employment was accomplished. Responses from over 96% of the CIED group, all those legally eligible for employment as a practical nurse and who also met the Study criteria, provided an estimate of the population of all possible employment locations for practical nurses.

A sample of employment locations was then selected from the estimated population. In depth, personal interviews were conducted with selected LPN's representing most shifts and service areas to provide basic data for analysis of the characteristics of employed practical nurses and their employment patterns, employers of practical nurses and the functions and responsibilities of practical nurses as viewed by themselves, their immediate supervisors (generally RN's) and experienced nurse aides employed in the same unit. All further investigations in this report are based on the CIED group and extensions from this group.

Procedures

Responses from 495 of 712 (Illinois)and 155 of 222 (Iowa) LPN's, 71% of the total, indicated they were employed in LPN positions on a part- or full-time basis. Separate employment locations were identified in Illinois, 258, and in Iowa, 90. For purposes of this Study, an employment location was defined as any institution, organization or position at which a LPN may enter and maintain gainful employment appropriate to her preparation. Included were hospitals of all types and functions, nursing homes, clinics, physicians' offices, industrial

establishments, public health agencies, and individual employment such as private duty. A single private duty nurse or a general hospital of 500 beds was counted as a separate employment location. The Journal of the American Hospital Association, Guide Issue, 1965, coding was used with some additions to classify the control, service, and bed capacity for hospitals. Comparable information was obtained directly from most other employment locations.

Illinois locations comprised 74.1% of the employment locations in the population to 25.9% in Iowa. Other reference ratios of Illinois to Iowa were: (1) 19.2 to 17.2 average number of LPN's employed per location, (2) 75% to 24% of all CIED persons in the combined group, (3) 77% to 23% of the employed LPN's in th employment location population, (4) 77% to 23% of all persons ever licensed as practical nurses in the two States; and, (5) 78% to 22% of the total population of the two States at the 1960 census period.

The original proposal for this Study called for interviews to be conducted at approximately 100 employment locations with an average of eight interviews at each location (four practical nurses, two immediate supervisors of selected practical nurses, and two experienced nurse aides working in the same unit as the LPN's). Interviews were to be pro-rated within the two States once the employment location and practical nurse populations were established. Basing interviews on most of the ratios cited above would have given a ratio of at least 75% in Illinois.

Preliminary analyses revealed some of the differences in employment between the two States and the major commonality of majority employment in general hospitals across the two States. Also, the generally smaller size of institutions in Iowa would have yielded fewer total interviews in that State. The Iowa population resided in more rural and small urban centers proportionately than in Illinois. In addition, it was necessary to maintain a staff at the University of Iowa of at least a minimum working size. To provide an adequate interview sample of LPN's, it was determined to use a 70-30 (Illinois to Iowa) ratio of employment locations. Hence, Iowa locations will be over-represented in later analyses in relation to the reference indices. However, due to the smaller number of LPN interviews per location 77% of all interviews were conducted in Illinois locations which is more consistent with the reference ratios.

Selection of the Employment Location Sample

It was assumed that it would likely not be possible to actually conduct interviews at all selected employment locations. Also, it was necessary to start the interviews before responses, giving their employer, had been received from all of the CIED persons. In the interest of economy of personnel time and travel costs, it was also necessary that the majority of the total employment locations be selected prior to the start of interviews so that all locations in the same geographic area could be accommodated by efficient travel schedules. Consequently, a preliminary sample of 70 (Illinois) and 30 (Iowa) locations was selected in November 1965 when approximately 90% of all responses had been received from the CIED group.

Additions to the sample, to maintain the actual interviews at 100 locations, were selected in February 1966. Selection at this later date not only provided the opportunity for the late respondents to be selected, but increased the population of LPN's and employment locations to include those persons who had been licensed from July through December of 1965. Five (Illinois) and four (Iowa) additional locations were selected at the later date to establish the total of 109 selected employment locations from the estimated population of 348, 258 Illinois and 90 Iowa.

A quasi-random selection procedure was used to select the actual employment locations. All employed, full-time and part-time, LPN's were listed by date of licensure and given a sequential number. A table of random numbers was used to select individual LPN's. Once an LPN was identified, her employer was declared in the sample. Since an individually employed LPN, a separate employment location, had only one chance of being selected and an institution employing twenty LPN's in the identified population had twenty chances, it was assumed that the employment location sample would proportionately represent the population of employed LPN's. The selection procedure was conducted separately for each State.

Interviews were conducted on site at the employment locations during a time schedule covering December 1965 through August 1966. Through making a prior contact and representation through the professional associations and assistance from many official agencies and individuals, interviews were completed in 101, 68 Illinois and 33 Iowa, of the originally identified 109 employment locations.

Clinical areas within the general hospitals indicated a core of functions. The number of core functions most important to each clinical area decreased with the degree of specialization in the area. The medical area included the largest number of core functions; whereas, obstetrics and operating room included the fewest.

Observing, reporting and recording activities in the core group comprised the most important functions of the medical, medical-surgical and public health LPN's. Common functions from the core group for geriatrics, nursing homes and specialized institutions involved obtaining TPR's, pouring and giving oral medications, and noting and transcribing physician's orders. Less importance was given to functions concerned with evaluating and maintaining less stable patient conditions.

LPN's tended to give a higher importance ranking to those functions for which they had independent responsibility for performing. Among these functions, they gave the higher rankings to those reflecting a more critical nature of patients as compared to those of a more basic or routine nature.

Ten of the fifteen most important functions comprising the core of common functions across most clinical areas are shown in TABLE 5.29. Also shown, are other functions ranked most often as important by the LPN's in each of the types of assignments. Percentages in the Table are the percents of LPN's in the clinical area who classified the function in one of the three most important categories.

The most important functions as determined by all LPN's were also common among those ranked most important by LPN's in the leadership or responsible assignments. A large majority of all LPN's were in general duty positions. In addition to functions in the core group, functions most important to LPN's in charge nurse positions were most often performed independently and concerned coordinating, supervisory and administrative functions. Team leaders performed a wider range of functions than most other groups and no functions were ranked consistently in the most important categories; medications activities received the highest importance ratings.

Across shifts, day to night, there was an increase in the number of and responsibility for functions performed. Observation, reporting, and recording functions were more frequently performed on night or evenings, but with more independent responsibility at night. Evening shift functions tended to have larger number of functions performed under shared or direct supervision.

CHAPTER VI

IDENTIFICATION OF COMMONALITIES IN PRACTICAL NURSING

Prior analyses reported in Chapter V were based on the ad hoc classifications developed by the nursing consultant panel and by analysis according to clinical areas and levels of assigment that were relatively well identified and established in the nursing field. A further attempt to identify commonalities of practice as represented by the function statements and possibly a conceptual structure of the practical nursing role was attempted. The card-sorts and instructions had been structured to encourage, and require, the practical nurse interviewees to use their judgment and experiences in making the decisions for performance and importance. Each LPN therefore utilized her total background and views in making each of the decisions in the sorting process. A basic assumption in the approach was that commonalities and views across all the LPN's could be identified by an analysis of the card-sort distributions made by the individual LPN's using their background and judgments.

It has already been reported that there was a high, positive and significant correlations between the level of responsibility for performance and the importance ranking given to the functions by the total group of LPN's and individually within the specialty sub-groups. Consequently, the importance distribution reflected the formal and informal education process, experiences, judgments, and to a large degree whether or not the LPN's performed the functions and the degree of responsibilities that they had when performing. The forced distribution and resulting rank values tended to reflect a bi-modality of: 1) functions performed by most of the LPN's, and 2) those functions seldom performed or performed by a relatively small number of LPN's. Such conditions violate, in part, the normal distribution requirement of parametric statistics.

Factor analysis is a statistical technique to determine with precision the extent to which a given variable measures an assumed hypothetical dimension or concept (factor). It also shows the degree to which different variables cluster (load) in identifying the underlying hypothetical concept. The factor analytic procedure was used in this latter manner in this inves-

tigation. Use of this statistic may be considered to be a matter of expediency and conceptually appropriate for the task at hand in assisting to determine the clustering of function statements.

The factor analysis used was the principle-axis method and interpretated as being bi-modal. Because of the forced distribution ranking and the high correlation between importance and independent performance, the factors would usually result in a bi-polar relationship. In each individual sort, once the high importance functions were selected, the remaining functions had to be ranked lower. Since the LPN's gave higher importance to the functions performed, the importance distribution reflected the mutually exclusive nature of the performances in the nursing situation. For example, if an LPN was employed in a geriatrics unit she would not likely perform obstetric functions. In simple number of LPN's employed, many more are required for the general nursing care activities than in any of the more specialized areas.

For analysis each function was given the rank value assigned by each of the 688 LPN's (See TABLE 5.7, page 136). Rank values were treated as an equal interval scale.

Factor analysis is a statistical method for extracting factor variances from a set of measurements, most commonly employed to identify underlying factors in tests. The application of this method to the nursing functions, with variance on the dimension of importance as seen by the performer, proposes to identify cohesiveness, unity or principles underlying the classification of the functions. The rationale for using this procedure was in part to compare the categorical assignments made by the nursing consultants for practical nursing education and to identify other relationships or interrelationships. From decisions made to find the "best fit" on the basis of importance, and comparison of the responsibility for the performance of functions, the scope and level of related functions could be identified within the clusters or factors.

Preliminary Analysis

The first step in the exploration was to submit the 99 functions as ranked by the 688 LPN's to a principle-axis, varimax rotation program with nine factors specified. Nine factors were used as a best estimate since the nursing consultant panel had determined nine categories. Each factor had an accounted for variance from a high of 17% to 7%. The first four accounted for over one-half of all variance.

Approximately twenty function statements had been identified on a prior basis that at least 75% of the LPN's never performed. As might be expected these functions were grouped as factors or sub-factors. They comprised the following clusters:

1. Functions which utilized special equipment or procedures and often performed in a physician's office, functions 1, 11, 21, 24 and 78. Included were: take x-ray pictures, perform a complete urinalysis, apply an arm sling, take an electro-cardiograph, and administer special sensory tests such as hearing or vision.

2. Functions or activities involving administrative, coordination and teaching roles comprised a second group, functions 7, 15, 30, 37, 47 and 64. Included were: select roommates for patients, conduct planned in-service program, employ or discharge personnel, supervise student practical nurses and teach prenatal classes.

3. Functions requiring specialized, complex procedures; 14, 22 and 28. They were: insert tube and collect gastric analysis speciman, start I. V.'s and remove nasal pack.

4. The remaining functions were: 23, make infant formula; 80, make substitutions within the prescribed diabetic diet; 84, help the patient plan for special diets; 63, prepare meals for patients in the main food preparation area; and, 95, dust floor of a patient's room.

The large factors in this first analysis defined broad areas; in some cases they were consistent with the categories of the nursing consultant group. All the 19 factors cited in the four clusters or sub-factors described above were then excluded from further analysis since they were: 1) performed by 25% or less of the LPN's, 2) accounted for a large proportion of the zero rankings on the importance scale and 3) had tended to form into clusters in the first analysis.

The second step in the factor analysis was the application of the same statistical approach, as above, to the remaining 80 functions with twelve factors specified. This analysis produced factors that were similar to the first analysis in some cases and Factors I, II and III which accounted for over 56% of the variance. (See TABLES 6.1 and 6.2)

Factor I is a large bimodal factor accounting for 28% of the variance. I-A, the larger and negative mode defines general nursing care activities with emphasis on personal and environmental aspects in the patient setting. A great majority of all LPN's performed the functions concerned with independent responsibility. The other mode, I-B, is clearly medication activities including orders for medications.

Factor II accounts for approximately 15% of the total variance and defines activities performed in more complex nursing care situations, more specifically, in a surgical setting. Almost two-thirds of the LPN's performed the functions involved with approximately one-third doing so with independent responsibility.

Functions usually performed in the special care units, obstetrics and surgery, comprised the high factor loadings in Factor III. Only about one-third of all LPN's performed the functions in this factor and one-third of those did so under shared or direct supervision.

The mean importance column shows the mean ranking across all 688 LPN's and may be used as a general guide. Due to the scale used each function had a theoretical mean of 4.03.

Identification of Practical Nursing Roles

The first two analyses had provided identification of several common factors. Some had been expected from a knowledge of the field and by the nursing consultant group. Factor I-A of the second analysis had provided the basis for defining a broad nursing care role which included most of the functions indentified as the core functions of the various clinical groups and the total group of LPN's. Observation, recording, reporting, personal and direct patient care in the nursing situation and performance of a range of special procedures. Within this large generalized factor, or role, there appeared to be several types of sub-activity clusters or factors.

TABLE 6.1: PRINCIPAL AXIS FACTOR ANALYSIS OF 80 FUNCTIONS
12 FACTORS SPECIFIED

(N = 688 LPN's)

FACTOR I

(Total variance accounted for = 28.0%)

FACTOR I-A

Functions Number	Factor Loading	Mean Import.	Responsibility			
			Ind.	Shar.	Dir.	Never
55	-.661	4.57	572	26	0	90
29	-.656	4.95	555	34	0	99
90	-.564	5.60	540	53	1	94
68	-.546	4.15	581	23	0	84
66	-.537	4.75	546	76	5	61
31	-.507	4.31	546	36	3	103
57	-.484	5.57	493	86	5	104
77	-.482	5.32	516	94	4	74
53	-.479	6.96	628	39	5	16
2	-.455	5.52	572	75	3	38
5	-.455	4.89	395	164	32	97
98	-.445	6.76	579	73	2	34
8	-.436	5.61	463	95	8	122
87	-.431	6.51	569	70	4	45
26	-.430	3.22	382	69	12	225
MEAN	-.505	5.25	529	68	6	88

FACTOR I-B

76	..577	4.05	93	101	81	413
73	.553	4.64	192	96	41	359
93	.492	4.23	161	107	51	369
49	.453	5.73	282	124	36	246
79	.419	4.76	172	109	45	362
94	.412	5.04	310	129	29	220
60	.394	3.63	71	81	40	486
MEAN	.469	4.58	183	108	46	351

TABLE 6.2: PRINCIPAL AXIS FACTOR ANALYSIS OF 80 FUNCTIONS
12 FACTORS SPECIFIED

(N = 688 LPN's)

FACTOR II

(Total variance accounted for - 14.9%)

Function Number	Factor Loading	Mean Import.	Responsibility			
			Ind.	Shar.	Dir.	Never
99	.532	5.44	198	179	64	247
25	.497	6.67	382	133	14	159
9	.385	4.66	403	71	6	208
54	.378	2.73	130	77	30	451
49	.359	5.72	282	124	36	246
45	.347	4.78	207	120	111	250
59	.338	4.61	278	115	33	262
65	.328	4.93	147	166	80	295
18	.317	3.29	123	56	23	486
MEAN	.497	4.76	239	116	44	289

FACTOR III

(Total variance accounted for = 13.3%)

Function Number	Factor Loading	Mean Import.	Responsibility			
			Ind.	Shar.	Dir.	Never
6	.613	3.30	116	55	29	488
82	.609	3.09	116	57	16	499
18	.608	3.29	123	56	23	486
10	.597	2.85	47	42	42	557
3	.577	3.08	66	38	33	551
69	.553	3.11	165	43	8	472
50	.460	2.97	193	29	12	454
MEAN	.574	3.10	118	46	23	501

Appendix C contains the list of 99 functions by numbers

A third analysis, principle-axis factor analysis with varimax rotation and nine factors specified, was applied to the importance distribution ranking of the 80 function statements. The assumption, and outcome, was that the total variance accounted for in the large generalized factor, Factor I-A in the second step, would be regrouped to better identify the included sub-factors. The other more specialized, and clearly defined, factors identified in the first two analyses would re-occur, although possibly not in the same order as in the earlier analyses.

In this investigation, identification of "pure factors" was not of concern. Rather, the statistical model was utilized as the most nearly appropriate means of helping identify the commonalities and clusters of practices and views underlying the decisions made by the LPN's in performing the importance card-sort. Factor loadings essentially reflect the level of relationship of the individual function, as ranked by the LPN's, to a central unity or concept. Interpretation and identification of the underlying unity is the task of the researcher from a knowledge of the field and statements concerned. In this interpretative endeavor the researcher must use conceptual and conjectural approaches. The identifications and interpretations that follow do not profess to be definitive, conclusive or the only ones possible from the results of the statistical analysis.

Functions within the factors are shown in the order of the factor loading, or amount of shared variance, with the higher loadings given greater influence in the identification of the unity or concept. Since it was possible for a particular function to have a high loading in a factor due to some unidentifiable relationship, characteristics of the statistical model or chance, some functions were arbitrarily eliminated from the factors as shown and described. Such decisions were made when a specific function did not appear to have an identifiable relationship. Each function had a loading of some magnitude on each factor. Those shown were the highest, except for the selected functions that may have been dropped. TABLE D-1 shows the complete matrix.

The approach used was one of attempting to identify the underlying unity or role of the practitioner of nursing, usually in the general hospital and concerned with patient care. Specific functions were conceived to be representative of a group or type of activity. No attempt was made to identify

the precise skills or knowledges required for performance of the individual function or the role activity in general. Persons competent in the nursing field could perform such analyses and identification. In a similar fashion others may alter, modify or redefine the unity or concepts of factors from the data presented.

FACTOR I

(Total Variance Accounted for = 15.8%)

Factor I is composed of bimodal elements that tend to reflect mutually exclusive types of activities. In general, LPN's who gave a high importance rating to one part, gave a low rating to the other, reflecting in part their particular nursing assignment. No unity or commonality across parts was derived.

TABLE 6.3: FACTOR I-A

Performance of relatively routine, supportive, personal care functions for the individual and his environment in the health care setting where he is in self-help to semi-dependent circumstances. This part, I-A, may be further divided into those functions concerned with maintaining the environment and those directly supportive to the individuals.

FUNCTIONS		Factor	Mean	RESPONSIBILITY			
No.	Statement	Loading	Import.	Ind.	Shar.	Dir.	Never
89	Clean a discharged patient's unit	.552	4.11	488	20	2	218
68	Make occupied or unoccupied beds, such as: open, closed, surgical, open-toed	.524	4.15	581	23	0	84
20	Wash drinking or medicine glasses in kitchenette on nursing unit	.485	2.65	337	14	0	338
31	Regulate temperature or ventilation in patient's room	.432	4.31	546	36	3	103
58	Disinfect bathroom and toilet	.382	2.12	206	22	2	464
	Sub-MEAN	.475	3.27	423	22	2	241
70	Prepare and serve between meal nourishment	.488	3.21	328	56	6	298
55	Prepare and position patient	.523	4.57	572	26	0	90
29	Bathe patient or help patient to bathe (in bed, tub, shower)	.475	4.95	555	34	0	99
26	Give a routine shampoo to patient	.482	3.22	382	69	12	225

FACTOR I-A (Continued)

No.	FUNCTIONS Statement	Factor Loading	Mean Import.	RESPONSIBILITY Ind.	Shar.	Dir.	Never
66	Move patient such as: Bed to/from chair Cart to/from chair	.399	4.75	546	76	5	61
77	Give an enema, such as: soap suds, tap water, oil retention	.374	5.32	516	94	4	74
13	Assist patient in recreational or occupational therapy, such as: encouragement, physical help	.276	4.27	428	77	9	174
19	Insert rectal or vaginal suppositories	.245	4.94	379	132	17	160
2	Collect a specimen, such as: sputum, urine, stool	.257	5.52	572	75	3	38
	Sub-MEAN	.391	4.53	475	71	6	135
	MEAN	.421	4.08	457	53	5	173

TABLE 64: FACTOR I-B

Performances involving specialized functions generally associated with the surgical or emergency room areas. All involve the use of devices and judgements concerning their functioning.

No.	FUNCTIONS Statement	Factor Loading	Mean Import.	RESPONSIBILITY Ind.	Shar.	Dir.	Never
46	Apply tourniquet to extremity control of hemorrhage	-.321	4.15	61	74	102	451
99	Check functioning of tubes for patient with chest tube drainage	-.311	5.44	198	179	64	247
75	Set-up equipment for asceptic surgical procedures in locations other than operating room such as: blood exchange, paracentesis, circumcision, oral surgery minor surgery	.299	4.06	115	110	82	381
45	Assist during procedures such as: Thoracentesis, lumbar puncture	-.285	4.75	207	120	111	250
3	Scrub for surgery or delivery	-.261	3.08	66	38	33	551
65	Regulate flow of blood transfusions	-.238	4.93	147	166	80	295
	MEAN	-.285	4.40	132	155	79	370

While parts A and B of Factor I have a commonality involving aspects of direct patient care, they differ primarily in the level of skill and knowledge required within the nursing situation. While the functions in Part A require a lower level of judgement, most practical nurses are involved in these performances with a relatively high degree of independence. On the other hand, the functions in Part B require a high level of knowledge, judgement and action and are most often performed in a situation where responsibility is at least shared with higher level personnel.

FACTOR I-A. This sub-factor may be characterized as showing continuity of supportive activities ranging from: 1) those primarily concerned with maintenance of the institutional environment to 2) those supportative of the patient through use of devices or the environmental situation to 3) those providing direct patient care. Underlying the total I-A sub-factor is the concept of supportive or substaining activities for protective care appropriate to the dependency role of the individual when hospitalized or institutionalized. Functions 89, 68, 20, 31, and 58 are differentiated from the others by the lack of, or per minimal, patient contact. Some functions (31, 89, and 58) involve the individual only as effected by the unit environment. The performance of these functions, therefore, does not require knowledge concerning dysfunction or nursing skills necessary for direct patient care. A basic concept of hygiene and sanitation in an institutional setting would be necessary for adequate performance of these functions. In this respect, the performer is acting as an agent of the institution in maintaining a protective environment for care.

A second sub-group of functions (70, 55, and following) differs from the first sub-group in that the individual is the recipient of the activities. These functions may be described as those specific to providing the supportive activities to the patient in meeting his physical and mental needs while he is in the dependency situation. While all of these functions require a direct and immediate relationship with the individual, they do not imply an element of dysfunction other than those implicit in a special environment. All functions in this second-sub-group might very well be performed by the individual for himself in the home or more independent situation.

Functions 77, 13, 2, and 19 show a lower factor loading than the other functions in this sub-factor. They more nearly represent procedures and techniques which ameliorate the dysfunctional situation which may be largely the result of the hospitalization and dependency role.

The mean shared variance for all functions in Factor I-A is .421. The mean importance given by the LPN's was 4.53 for the total. Approximately two-thirds of all LPN's performed these functions with independent responsibility. Fewer of the LPN's, on average, performed the functions related to housekeeping or aide personnel. LPN's more often performed those functions more directly involved with patient contact. The mean importance would tend to reflect that a majority of the LPN's not only performed the functions in this factor but consider them to be of above average importance in carrying out their role in their present assignment. Also, those functions involving direct patient care were seen as being more important than those in maintaining the environment. LPN's performed the functions in this sub-factor with a high degree of independence in comparison to those individuals who performed these functions under shared or direct supervision.

FACTOR I-B. This sub-factor includes a group of functions performed, on average, by less than one-half of all LPN's. In addition, more LPN's performed the functions under shared or direct supervision than carried out the performances under independent responsibility. Each of the functions is a more specialized performance generally related to surgical or emergency room activities and therefore would imply a lower level of frequency of performance. In all cases, they reflect a higher level of judgement and nursing practice than is reflected in sub-factor I-A. Functions 75, 45, and 3 are activities which would be supportive to a physician or other professional who would be providing the direct patient contact activity. Although the mean importance is somewhat below average across all LPN's, the smaller number of LPN's actually performing these functions would tend to reduce the overall mean. The mean for those LPN's who actually perform these functions would be considerably higher. Function 76 and 60 showed the next highest shared variance on this sub-factor but were dropped as being not sufficiently consistent with activities reflected by the other functions. Also, they appeared with a higher loading on factor two.

TABLE 6.5: FACTOR II

(Total variance accounted for: 14.7%)

Administration, including obtaining and measurin· of medications.

No.	FUNCTION Statement	Factor Loading	Mean Import.	RESPONSIBILITY Ind.	Shar.	Dir.	Never
49	"Pour" and give oral medications	-.748	5.73	282	124	36	246
81	Give intramuscular injections	-.744	5.23	241	117	28	302
73	Give subcutaneous injections	-.700	4.64	192	96	41	359
94	Instill medication for the eye, ear, or nose	-.592	5.04	310	129	29	220
76	Compute fractional doses of medicine	-.513	4.04	93	101	81	413
79	Note and transcribe doctor's orders on medicine cards, Kardex, ect.	-419	4.76	172	109	45	362
60	Teach a person to inject his own insulin	-.366	3.63	71	91	40	486
93	Take verbal medication or treatment order from doctor	-.295	4.23	161	107	51	369
19	Insert rectal or gavinal suppositories	-.239	4.94	379	132	17	160
	MEAN	-.513	4.69	211	112	41	324

FACTOR II. The medications area has probably received more discussion and has been cited more often as a measure of distinction or responsibility within the nursing field than any other single activity. It is only within relatively recent years that the LPN has been performing more extensively in the medications area. Consequently, it is not surprising that this area has the second highest accounted for variance. The relative factor loadings tend to be associated with the degree of responsibility or judgement required. Except for function 94 all others carry with them the requirement of measurement of dosage and administering the medication. The lower mean importance of function 94 would also imply that the judgement factors have been reduced through prior exploration and this action is now more routine.

On average, slightly less than one-third of the LPN's perform the functions in this factor. Within the factor there is a relatively wide-range of independent, shared and never responsibility. Almost one-half of the LPN's do not perform the medications functions in this factor. This average is somewhat high due to the contributions of function 76 and 60 where approximately two-thirds of the LPN's do not perform those functions. On the other hand approximately one-half of all LPN's give injections.

Approximately 25% of all persons performing these medications functions do so under either shared or direct supervision. Although the mean of the mean importance is 4.69, the relatively fewer LPN's who performed the functions independently rated the functions (particularly functions 49, 81 and 94) as being highly important in their role.

Clearly this factor represents an activity where the LPN performs a direct, individual-centered function, but the acitvity is almost always performed within a prescribed context. That is, the physicians order or instruction will be on record indicating the specific action to be taken. Although these procedures usually involve a moderate degree of complexity or technical skill, they do carry a high level of responsibility and integrity. Because the medications are prescribed by the physician's order, discretion in the nursing care plan is limited. To this extent, while accuracy underlies both preparing and administering medications, the functions themselves have a technical connotation in performance. In addition, medication practices reflect both the institutional policy and the LPN's preparation to perform the functions.

Both high factor loading and high mean factor loadings indicates that medications is a relatively well-defined area of concern in the LPN's performance.

FACTOR III

(Total variance accounted for: 13%)

Factor III appears to define bimodal aspects of the LPN's nusring role in a hospital or institutional setting.

TABLE 6.6: FACTOR III-A

Individual centered directly supportive nursing activities performed where patients are in a semi- or totally dependent envirorment involving specialized devices or techniques.

FUNCTION		Factor	Mean	RESPONSIBILITY			
No.	Statement	Loading	Import.	Ind.	Shar.	Dir.	Never
99	Check functioning of tubes for patient with chest tube drainage	.504	5.44	198	179	64	247
59	Give nursing care (not necessarily medications) to a patient following cataract or retinal surgery	.468	4.63	278	115	33	262
52	Give oral hygiene to the patient with a fractured jaw.	.446	4.05	217	97	52	322
27	Give a bath or a treatment to a patient in a croupette or oxygen tent	.431	4.67	378	92	6	212
62	Assist patient in postural drainage	.408	4.43	316	111	27	234
43	Adjust apparatus of patient in traction, such as: orthopedic, neck, pelvic	.329	4.25	215	145	54	274
25	Observe vital signs following a general anesthesia	.328	6.67	382	133	14	159
9	Strain urine for stones	.326	4.66	403	71	6	208
35	Give urinary bladder instillations or irrigations	.322	5.28	343	144	30	171
67	Apply and remove artificial limb	.313	3.09	200	72	33	383
96	Instruct paralyzed patient how to establish pattern for habit formation of elimination	.304	3.83	215	103	29	341
	MEAN	.380	4.64	286	115	32	256

TABLE 6.7: FACTOR III-B

Indirect patient care nursing activities performed as an intermediary for or extension of the physician in carrying out his treatment plan in the institutional setting.

FUNCTION No.	Statement	Factor Loading	Mean Import.	RESPONSIBILITY Ind.	Shar.	Dir.	Never
93	Take verbal medication or treatment order from doctor	-.351	4.23	161	107	51	369
10	Circulate in operating room or delivery room	-.350	2.85	47	42	42	557
79	Note and transcribe doctor's order, medicine cards, Kardex, etc.	-.335	.476	172	109	45	362
50	Operate autoclave to sterilize instruments or treatment pads	-.319	2.97	193	29	12	454
3	Scrub for surgery or delivery	-.259	3.08	66	38	33	551
85	Assist the physician with rounds	-.248	4.29	252	116	39	281
51	Fill out requisitions to special departments such as laboratory or x-ray	-.242	4.21	270	148	42	228
72	Complete and sign incident or unusual report forms	-.235	3.71	162	143	79	304
	MEAN	-.292	3.76	165	92	43	388

FACTOR III-A. Functions comprising this sub-factor reflect the range of activities which would usually be associated with traumatic rather than chronic situations. Many are asspciated with surgical and related activities.

In each case the LPN functions as an extension of the patient in supplying supportive activity for his physical and personal needs. Most of the functions require a high level of flexibility in the nursing care situation. Apparent in these functions is astuteness and awareness of the patient's apprehension and dependent situation. A corollary requirement is the perception and judgment concerning the proper functioning of the special equipment and devices involved.

On average, slightly over 40% of all LPN's performed the functions in this sub-factor independently. A slightly lower percentage never performed the functions in this sub-factor. Functions included in this sub-factor are sometimes described, or cited, as complex nursing activities. Only two functions had a mean importance rating below average.

FACTOR III-B. Functions in this sub-factor lack the unity or identity and precision reflected in Sub-Factor III-A. The functions are more descriptive of the activities performed in carrying out treatment and providing direct individual care. The functions are acts of assistance to, or intermediary between, the physician, the patient and supportive activities.

Slightly less than one-half of all LPN's, on average, performed the functions in this sub-factor. Approximately one-fourth of the LPN's performed each function independently. Mean shared variance of -.292 is significant but relatively low. In addition, all functions are included as a part of other factors and generally have a higher shared variance with that factor. In general, the mean importances are below average for all functions.

While there is a unity of nursing practices performed within a hospital or institutional setting defined in this factor, the modes clearly define two types of activities. The overall high factor loadings in Sub-Factor III-A defined a higher level of skilled nursing activity than is reflected in Sub-Factor III-B. Reletively few of the LPN's engaged in the activities described in Sub-Factor III-B, and most functions were performed with a high degree of shared and direct supervision. It is quite likely that the lower level of actual performance across all LPN's s own in functions in Sub-Factor III-B contributes to the somewhat separate identity of this component.

TABLE 6.8: FACTOR IV

(Total variance accounted for =12.9%)

Factor IV - Maternity and new-born patient care

No.	FUNCTION Statement	Factor Loading	Mean Import.	RESPONSIBILITY Ind.	Shar.	Dir.	Never
18	Massage fundus of newly delivered mother	-.763	3.35	123	56	23	486
69	Give breast and nipple care to the new mother	-.749	3.11	165	43	8	472
82	Complete newborn nursery admission procedure, such as: footprints, weight, bath	-.733	3.09	116	57	16	499
6	Take the fetal heart tone	-.726	3.30	116	55	29	488
3	Scrub for surgery or delivery	-.446	3.08	66	38	33	551
10	Circulate in operating room or delivery room	-.418	2.85	47	42	42	557
	MEAN	-.639	3.13	106	48	25	509

FACTOR IV. The first four functions show the highest shared variance of any group of functions and are directly related to activities of the maternity unit. Functions 3 and 10 are dual functions with one aspect concerned with the delivery room. This factor is more nearly descriptive of a particular nursing specialty than any other factor.

Since only 66 of the LPN's reported a duty assignment in the OB-Gyn area, there is apparently at least an equal number who work in this area as a part of their duties. An average of 130 persons perform the first four functions independently while about half that many more perform under supervision.

The low mean importance value across all LPN's was expected for this more restricted group of functions.

FACTOR V

(Total variance accounted for = 12.4%)

Factor V appears to most nearly define a general role of the LPN as one of communication in the nursing situation and providing less complex individual nursing care. This role is also distinguished from the physician assisting role in aseptic-surgical activities.

TABLE 6.9: FACTOR V-A

Communication of individual patient care needs through obtaining and exchanging mental and physiological information and providing less complex, individual nursing care.

	FUNCTION	Factor	Mean	RESPONSIBILITY			
No.	Statement	Loading	Import.	Ind.	Shar.	Dir.	Never
87	Record condition of the skin or discharges, such as: appearance, odor, color	.600	2.85	569	70	4	45
98	Observe condition of the skin or body discharges, such as: color, odor, appearance	.515	3.08	579	73	2	34
90	Record intake and output for a 8 hour or 24 hour period	4.16	4.06	540	53	1	94
74	Admit patient to nursing unit and obtain initial nurse's notes chart information	.412	5.84	508	79	4	97
48	Attend nursing unit report to receive condition and status of patients	.408	2.97	493	83	14	98
34	Record on individual patient chart observations made or treatments given by you	.406	4.78	562	70	7	49
53	Obtain temperature, plus, and respirations	.364	6.96	628	39	5	16
29	Bathe patient or help patient to bathe (in bed, tub, shower)	.355	4.95	555	34	0	99
55	Prepare and position patient to eat	.347	4.57	572	26	0	90
77	Give an enema, such as: soap suds, tab water, oil retention	.330	5.32	516	94	4	74
8	Remove potentially hazardous objects such as glassware, razor, or belts from a depressed patient	.259	5.61	463	95	8	122
	MEAN	.401	5.93	589	65	4	74

TABLE 6.10: FACTOR V-B

Nursing functions performed in an assisting role to the physician in aseptic-surgical activities.

FUNCTION No.	Statement	Factor Loading	Mean Import.	RESPONSIBILITY Ind.	Shar.	Dir.	Never
10	Circulate in operating room or delivery room	-.419	2.85	47	42	42	557
3	Scrub for surgery or delivery	-.412	3.08	66	38	33	551
74	Set up equipment for aseptic surgical procedures in locations other than operating room, such as: blood exchange, paracentesis, circumcision, oral surgery, minor surgery	-.325	4.06	115	110	82	381
46	Apply tourniquet to extremity for control of hemorrhage	-.281	4.15	61	74	102	451
50	Operate autoclave to sterilize instruments or treatment pads	-.276	2.97	193	29	12	454
45	Assist during procedures such as: thoracentesis, lumbar puncture	-.203	4.78	207	120	111	250
	MEAN	-.319	3.64	115	69	64	441

In each mode of Factor V is an element of the LPN performing as an extension of and in support to the treatment plan of the physician. She is the responsible person who is on site to observe, function with judgement of the situation and help provide support for a higher level of descision or action.

FACTOR V-A. Functions loading high on this sub-factor are oriented to the individual patient where the LPN provides the necessary communication through her skilled observation perceptions and actions. She obtains and exchanges information concerning the individual within established nursing procedures and provides less complex nursing care requiring judgements based on her information. Judgements and reporting are based on her competency and knowledge of general standards with less reliance on standardized measuring instruments. These functions comprise essential components in planning and carrying out total patient care within a hierachial structure through providing for communication between the patient, nursing personnel and the physician for full evaluation and treatment.

There appears to be a fairly high degree of commonality between this sub-factor and VI-A. Several functions included in VI-A showed a somewhat lower loading on this sub-factor.

This sub-factor was given the highest mean importance value, 5.93, of any factor or sub-factor. Consistent with the high mean importance is the fact that, on average, almost 90% of all LPN's perform these functions, 85.6% independently.

The above results define a major role of a great majority of all LPN's as being one of patient-centered activity and as an intermediary in the nursing unit. They see this as probably their most important role in being a successful LPN.

FACTOR V-B. The second mode defines a sub-factor which is an alternate role for a minority of the LPN's. This sub-factor prescribes a role and performance of the LPN as essentially non-patient involved. She is largely removed from the immediate, personalized patient environment to a specialized situation or unit. Here her major role is defined by activities involving special technical knowledges and procedures, usually aseptic-surgical, and where a higher level professional is directly making judgements concerning the patient.

Almost two-thirds of the LPN's never perform the functions in this sub-factor and an additional almost 20% do so only under supervision.

FACTOR VI

(Total variance accounted for = 10.6%)

Factor VI - Maintenance of coordinated, patient activities related in the institutional setting. One mode defines patient care while the other concerns patient-institutional activities.

TABLE 6.11: FACTOR VI-A

Monitoring and maintaining a desirable patient condition through making physiological and mental health-emotional checks and taking individual oriented, corrective actions.

FUNCTION		Factor	Mean	RESPONSIBILITY			
No.	Statement	Loading	Import.	Ind.	Shar.	Dir.	Never
56	Take blood pressure	.463	6.89	575	65	3	45
53	Obtain temperature, pluse, and respirations	.446	6.96	628	39	5	16
57	Apply side rails to a bed of a patient who becomes confused	.416	5.57	493	86	5	104
41	Instruct patient to deep breathe	.358	5.48	547	50	6	74
2	Collect a speciman, such as: sputum, urine, stool	.338	5.52	572	75	3	38
66	Move patient such as: bed to/from chair cart to/from chair	.318	4.75	546	76	5	61
4	Perform a urine analysis for sugar	.304	5.21	462	57	1	168
	MEAN	.340	5.63	546	65	4	72

TABLE 6.12: FACTOR VI-B

Coordination and intermediary activities for the patient-in-the-institution performed to relate the patient to his family, physician, records and other nursing personnel.

FACTOR VI-B

No.	FUNCTION Statement	Factor Loading	Mean Import.	RESPONSIBILITY Ind.	Shar.	Dir.	Never
92	Explain the current condition of a patient to the immediate family	-.361	2.90	104	106	63	415
85	Assist the physician with rounds	-.350	4.29	252	116	37	281
93	Take verbal medication or treatment order from doctor	-.325	4.23	161	107	51	369
36	Observe and report drainage on a dressing	-.364	2.95	75	86	69	458
12	Perform rectal examination of patient, such as: patient in labor, patient with fecal impaction	-.305	3.61	166	96	29	397
54	Make patient assignments to other nursing personnel	-.254	2.73	130	77	30	451
79	Note and doctor's orders on medicine cards, Kardex, etc.	-.239	4.76	172	109	45	362
39	Obtain signatures for legal documents, such as permission to operate, consent for autopsy, perform tests, or wills	-.230	3.51	139	103	58	388
	MEAN	-.304	3.62	150	100	48	390

Sub-Factors A and B in this factor parallel to the degree the A and B Sub-Factors of Factor V. Communication is an essential concept and requirement in all sub-factors.

Monitoring, coordination and maintenance of patient care in the institutional setting is the common element in Factor VI. The differentiating feature of the sub-factors is the recipient of the activities - the patient in A and the supporting situation and personnel in B.

FACTOR VI-A. Functions in this sub-factor revolve around a role performed in maintaining the individual in the nursing situation through checks and actions, including evaluations and judgements. Interaction of LPN and patient may result in forwarding information for evaluation or the purpose may be completed by the LPN with the interaction itself. This factor, in contrast to Factors I and III, does not connote the importance of direct nursing care to an individual in dependent role. In the performance of these functions the LPN may be acting

as a result of a physician's order, or within institutional policy and regulations. Similarly, the importance and frequency of performance may vary among institutions, nursing units and special orders. In this sense she is performing more as an agent of the institution than the physician.

Sub-Factor VI-A has the second highest mean importance across functions and the two individual functions with the highest mean importance value for all LPN's. Approximately 80% of the LPN's performed the included functions independently and another 10% under supervision. Mean shared variance of .340 is in the middle range of the identified factors and sub-factors giving less precise definition to this factor.

FACTOR VI-B. Functions in this sub-factor describe the LPN in the intermediary position but in an extended context including but beyond that of the physician's assistant, as in Sub-Factor V-B, and as a communicator in Sub-Factor V-A. The described role differs in that she is coordinating among the physician, nursing personnel, records and the family. By and large, they are not centered on direct contact with the individual and may be performed away from the immediate patient environment. Information exchange activities may relate the patient environment to an outside source for initiation, receipt or decision.

Mean importance is below average and reflects the fact that less than half of all LPN's perform these functions, less than one-fourth independently, Those functions involving direct relations with the physician are given in the high mean importance in this sub-factor and tend to be performed more often.

TABLE 6.13: FACTOR VII

(Total variance accounted for = 8.5%)

Genito-urinary procedures requiring skill in manipulative technique and personal-emotional individual relationships.

FUNCTION		Factor	Mean	RESPONSIBILITY			
No.	Statement	Loading	Import.	Ind.	Shar.	Dir.	Never
42	Catheterize patient	.698	5.88	395	130	23	140
38	Insert indwelling catheter	.600	5.27	316	123	31	218
71	Adminster vaginal douche	.472	4.55	367	101	12	208
35	Give urinary bladder instillations or irrigations	.340	5.28	343	144	30	171
19	Insert rectal or vaginal suppositories	.336	4.94	379	132	17	160
32	Remove fecal impaction	.324	4.48	300	107	28	253
	MEAN	.462	5.07	350	123	39	192

FACTOR VII

Direct, individual centered functions in this factor define an area of LPN performance involving the dual aspects of technique and sensitive, intimate interpersonal relationships with the individual. Both the physical and mental comfort of the individual are dependent on the competency and sensitivity of the LPN. Functions 42 and 38 show the highest factor loading and are most exemplary of the nature of the interpersonal relationships and activities. In addition, a majority of the functions require application of sterile technique.

The high mean factorrloading reflects a unity of concept with the area for the included functions. A major of all LPN's performed functions in this sub-factor independently and reflected a relative high importance by a mean of over five.

FACTOR VIII

(Total variance accounted for = 7.4%)

Observing and performing of technical nursing skills for dependent individual in specialized situations - intravenous and rehabilitation.

TABLE 6.14: FACTOR VIII-A

Maintenance of intravenous treatment through observation and performance.

FUNCTION		Factor	Mean	RESPONSIBILITY			
No.	Statement	Loading	Import.	Ind.	Shar.	Dir.	Never
17	Discontinue I.V. solutions	.602	5.27	390	146	26	146
61	Add additional I.V. solution to continuous I.V. solution or transfusion	.598	5.20	205	175	57	251
65	Regulate flow of blood transfusions	.563	4.93	147	166	80	297
	MEAN	.515	5.52	281	155	44	213

TABLE 6.15: FACTOR VIII-B

Assisting and supporting individual through physical and mental rehabilitative activities

FUNCTION		Factor	Mean	RESPONSIBILITY			
No.	Statement	Loading	Import.	Ind.	Shar.	Dir.	Never
13	Assist patient in recreational or occupational therapy, such as: encouragement, physical help	-.339	4.27	463	95	8	122
96	Instruct paralyzed patient how to establish pattern for habit formation of elimination	-.249	3.83	215	103	29	341
8	Remove potentially hazardous objects such as glassware, razor or belts from a depressed patient	-.231	5.61	428	77	9	174
	MEAN	-.273	4.57	369	92	15	212

Functions in this factor are those appropriate to specialized assignments or units. In each mode the performance centers on a dependent individual.

Necessary elements in all cases are close perceptions, observations, and judgements in both the physical and emotional areas.

FACTOR VIII-A Functions in this sub-factor are most frequently performed in situations where the dependency condition is related to fluid imbalance. This condition often connotes extreme dysfunction which in some cases may depend on the functions as life sustaining measures. Consequently, the required critical level of judgement may be seen as putting the performance in a unique category.

The high mean shared variance and high mean importance value reflect the concern of the LPN's in performing these functions.

FACTOR VIII-B. Close, personal individual - patient interaction in giving protective, supportive and rehabilitative care and assistance to a physically and emotionally dependent patient. Performance of these functions would most likely occur in specialized units such as: psychiatric or geriatric.

TABLE 6.16: FACTOR IX

(Total variance accounted for = 4.6%)

Coordination and communication for individual patient services outside the nursing care situation.

No.	FUNCTION Statement	Factor Loading	Mean Import.	RESPONSIBILITY Ind.	Shar.	Dir.	Never
88	Refer a patient to an outside agency, such as: health, social, religious	.465	2.37	94	73	39	482
97	Refer patient to an agency inside the hospital, such as: social service, chaplain	.434	3.01	184	110	62	332
51	Fill out requisitions to special departments such as laboratory or x-ray	.226	4.21	270	148	42	228
MEAN		.375	3.20	183	110	48	347

FACTOR IX. Functions in this factor identify a LPN role in the total health care plan where services may be performed for either admitted or out patients and performed within or outside the institution. Such services include medical, social and personal. The LPN is the coordinator between the individual and elements of the broad health care system.

Approximately one-half of all LPN's performed all functions concerned with an inside-the institution service but only 30% performed outside referrals.

Roles of Practical Nurses

The factor analytic approach used in this investigation was effective in providing clusters of functions through use of factor loadings. A total of fourteen factors or sub-factors were determined to define meaningful roles of practical nurses. Some of the roles were found to be broad, general and performed with independent responsibility by a large majority of the LPN's; within such roles distinctions between orientations were made.

In summary the fourteen roles may be regrouped as:

1. Nursing care provided for individual patients.

   1.1 Routine supportive personal, care of the patient and the patient environment (FACTOR I-A). Performed with independent responsibility by a large majority of all LPN's.

   1.2 Monitoring and maintaining a desirable patient condition through making checks and taking individual, patient oriented corrective actions (FACTOR VI-A). Performed with independent responsibility by a great majority of all LPN's.

   1.3 Individual patient centered activities for more dependent persons which require specialized devices or techniques (FACTOR III-A). Performed by two-thirds of all LPN's, and over one-third have independent responsibility for performing the activities.

   1.4 Genito-urinary procedures (FACTOR VII). Performed by over two-thirds of all LPN's and independently by over one-half.

2. Coordination and communication basic to patient care.

   2.1 Communicating individual patient care needs through obtaining and exchanging information, in part, through providing less complex nursing care (FACTOR V-A). Performed with independent responsibility by a large majority of all LPN's.

   2.2 Indirect patient care activities performed as an intermediary or extension of the physician in the institutional setting (FACTOR III-B). Performed by approximately one-half of all LPN's and independently by one-fourth.

   2.3 Coordination of activities to relate the individual patient-in-the-institution to his family, physicians, records and other nursing personnel (FACTOR VI-B). Performed by slightly less than one-half of all LPN's and independently by almost one-fourth.

   2.4 Coordination and communication for individual patient services outside the nursing care situation (FACTOR IX) Performed by one half of all LPN's and independently by slightly more than one-fourth.

3. Performance of selected groups of activities often associated with specialized clinical areas or assignments.

   3.1 Administration of medications, including obtaining and measuring (FACTOR II). Performed by over one-half of all LPN's and independently by almost one-third.

   3.2 Performance of activities requiring use of devices and judgments usually associated with the surgical or emergency room areas (FACTOR I-B).

   3.3 Nursing functions performed in an assisting role to the physician in aseptic-surgical activities (FACTOR V-B). Performed by 35% of all LPN's and independently by 16%.

   3.4 Maternity and new-born patient care (FACTOR IV). Performed by one-fourth of all LPN's and independently by about 15%.

   3.5 Maintenance of intravenous treatment through observation and performance (FACTOR VIII-A). Performed by over two-thirds of all LPN's and independently by over one-third.

   3.6 Assisting and supporting patients through physical and mental rehabilitative activities (FACTOR VIII-B). Performed by over two-thirds of all LPN's and independently by over one-half.

Each of the broad and included roles would appear to provide an identifiable and somewhat distinct theme or principle. The broad and general role descriptions previously suggested by the nursing associations apparently have several components. In addition, the range, level of performance and degree of responsibility carried by the practicing LPN's exceeds what would be suggested by the association descriptions.

Curriculum planners for practical nursing educational programs, pre-service and in-service, may find the identified performances and roles helpful in making decisions including the questions of: 1) inclusion or exclusion 2) relative emphasis, 3) themes of organization, and, 4) instructional strategies.

CHAPTER VII

SUMMARY

An estimate of the current population of LPN's and their characteristics in Illinois and Iowa was obtained through selection of a ten per-cent sample of all persons who had ever been licensed in each of the states. Data were obtained from the records of the official licensure agencies. Subsequent follow-ups to all persons who: 1)had a current license,in the reference states, 2) obtained a license after completing an educational program, and 3) lived in the reference state provided employment data. From the follow-ups, 101 employm nt locations were selected as a sample of all such locations that might provide employment for one or more LPN's. In addition, employment and personal characteristics of LPN's were determined.

Tests for differences between the estimated populations and samples found the samples to be essentially representative except for over-representation of general hospitals with 500 bed capacity or over. A total of 941 personal interviews including 688 LPN's, were conducted at the 101 locations. Employment locations included all types, sizes and purposes. Interviewees at the locations were selected to include all types of duty assignments, shifts and services.

Data were obtained from administrator and directors of nursing pertinent to the employment location. The in depth, individual interviews obtained personal, educational and occupational information from 688 LPN's, 129 PN's who were immediate supervisors of 129 of the LPN's and 123 experienced Aides working in the same units as some of the LPN's. All interviewees then performed a responsibility sort of a sample of 99 nursing function statements to determine the functions performed by LPN's and the level of responsibility for their performance. Each LPN then performed a modified Q-sort of the functions on the dimension of importance of the function in carrying out her role as a practical nurse in her present assignment.

General Characteristics of Illinois-Iowa LPN's

The trend toward an increasingly greater proportion of young LPN students, more pronounced in Iowa than in Illinois, was also reflected in the ages of the employed LPN's. Of the total, 22% were 24 or younger and 35.7% were 45 or over. Comparison of participation rates by women in the U. S. labor force and LPN's were similar except for the 25-34 age group where LPN's tended to maintain a relatively higher participation rate during the child-bearing years. White LPN's were a significantly older group than non-white, but no differences were found between whites and non-whites in maintaining an active license or participation in the labor force.

Of the 688 LPN's, 58.8% were married, 22.9% single, and 18.3% were divorced, separated, or widowed, designated as head-of-household. Illinois had a higher percentage of married, 62%, compared with Iowa, 48.4%, attributable, in part, to the large number of young LPN's in Iowa, of 158 single LPN's, 103 were in the less than 25 age group. Except for the youngest age group, two-thirds of the LPN's were married. Of the total, 35.1% had no children, 37.9% had one or two children, 13.7%, three children, and 13.3%, four or more. In each age category, the head-of-household was more likely to have children than the married. No differences were observed in the employment rates for persons with different numbers or ages of children.

While LPN's tended to come from large or medium size families, little relationship was found betwen sibling placement and choice of nursing as an occupation. Comparisons of family size of white and non-white LPN's revealed a tendency for non-white to be from larger families. Further investigation and study appears warranted to discover relationships betwenn family size and occupational choice, patient-care orientation and size and placement in family, and financial limitations and size of family.

For both states, 73.1% of the LPN's had completed twelve years of formal education, approximately 22% had finished tenth grade and only one percent had an eighth grade or less education. By state, 93.7% of Iowa and 67% of Illinois LPN's had completed twelfth grade. This difference

reflects both the younger age groups in Iowa and the recent high school graduation requirement in Iowa. The educational attainment of all LPN's exceeded the mean for both women in the national population and labor force.

An attempt was made to interview a larger proportion of male LPN's. Twenty were included in the interview sample. Most of the 20 were amrried, recent graduates, and present employment was considered an improvement over prior jobs. Approximately one-half were employed in hospitals under state or federal government administration. In their duties, twelve performed general functions and five were supervisors of five or more. Five of the twenty were non-white.

Motivation, Mobility, and Occupational Reasoning

A striking aspect of the employed practical nurse was her occupational dedication. Gainful employment in nursing was assumed very shortly after completion of the educational program with continued employment in the same position by over half of the group. The largest single influence for taking a position in a specific nursing assignment was prior clinical experience during a practical nurse education program. This reason was given more frequently by the younger groups. The reasons, otherwise, were primarily in the areas of opportunity, preference, and influence of others. Financial reasons were not frequent responses. Attitudes of LPN's about current job shows a change in position generally was viewed as an improvement and betterment more related to a move to another location. Evaluations of current job by clinical area and leadership role revealed physician's office nurses as the only assignment clearly seen as an improvement and more desirable. Further study is indicated to identify factors contributing to personal motivation in work orientation which may contribute to mobility within the nursing field and a more clear identification of the complex of factors contributing to either personal or job oriented preferences.

LPN-RN Agreement on LPN Nursing Activities

The performance of functions as reported by the LPN's and the paired LPN-RN groups provides guidelines for knowledges, responsibilities, and hierarchical relationships with health personnel. High agreement was found among the 688 LPN's, but closest agreement was found between the paired individuals. The supporting perceptions of the RN's essentially confirmed the LPN's descriptions. The validity and reliability was further substantiated by the continuity of employment of both. From the paired sorts, a clearer identification of roles and responsibilities arose from the familiarity and supervision within the immediate working relationships. The wide range of functions and high degree of independence tends to negate clearly, defined lines between roles of LPN's and RN's. Considerable overlap of roles was readily apparent from these data.

A large group of supportive and patient-centered, basic nursing functions comprise the core or common activities across the practice of practical nursing. Monitoring, coordinating, observing and reporting are included in this central core. However, the majority of LPN's are also performing activities of a more complex or technical nature in each clinical area of assignment. Smaller but significant numbers are responsible for the full range of nursing activities in some specialty assignments and locations.

Curriculum Organization and Re-evaluation

Statistical analysis of the importance rankings of functions by LPN's provided conceptual clusters of activities and subsequent identification of roles. This framework along with the degree of responsibility in performance and the extent of functions performed should provide indices for evaluation of present curricula and organizational patterns for educating practical nurses. Actual performances and reports by the practical nurse in the performing role can be incorporated in formulation and identification of job descriptions and requirements.

The traditional approach to curriculum based around clinical areas seems to be a valid approach in many respects. The actual breadth of assignments and the levels of responsibility are greater than has been previously recognized. The diversity and expansion of roles will, however, necessitate inclusion of a wider area of experiences and skills not commonly in the basic programs. Familarity and competency in the identified roles may be obtained by a reorganization of curricula. Acquisition of these may be provided by pre-service or in-service programs.

The increasing number of LPN's in assignment levels ranging from team leader to supervisors reflects a need for in-service or on-the-job training.

Recommendations for broader inclusion of the preparation and giving out medications was substantiated by this Study. The percentages of LPN's giving medications as a part of their general activities with a high level of responsibility and the five percent who were specifically designated as medications nurses clearly requires inclusion in the basic curriculum. Another guage or estimate of the discrepancy between basic preparation and job expectancies or requirements was found in the evaluation of adequacy of preparation for current job by the LPN's; they were generally adequate except for the medications area.

Role Definitions

Data obtained from employed LPN's and their RN supervisors indicated differences in roles as defined by the practitioners and the formal statements by professional organizations. Statements of functions describe a practitioner directly operating under supervision of a RN or physician who is available for decisions. Employed LPN's, however, were functioning in all types of institutions and employment settings in and outside the general hospital where such direct supervision was not directly available of the job. The LPN's and RN's both reported considerably higher levels of responsibility for the practical nurse in all areas than has been previously recognized. Capability and competence in performance with the

present level of preparation which included both pre- or in-service experiences was confirmed by their direct supervisors and discussions with directors of nursing service.

The most recent statement regarding educational programs in practical nursing by the National League for Nursing reiterates the limited nursing functions and a limited range of patient-care situations for LPN's (NLN, 1968). While a majority of LPN's practiced nursing in patient-care situations, the range of functions performed and the subsequent responsibility were broad and inclusive. Increasing numbers of practical nurses are in roles of assistance to physicians and administrative-supervisory capacities. Insistence upon narrow and unrealistic definitions of performance, contrary to observed and reported evidence by LPN's and RN's actually employed in the field, will contribute to inappropriate educational experiences for job requirements.

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APPENDIX A

INTERVIEW FORMATS AND CODES

A-1

EMPLOYMENT LOCATION INTERVIEW

Name 1-29 _____ I. D. 74-76 _____

Address 31-73 _____ Type 77-78 _____

Card 79-80 _____

I. D. No. (assigned) __ __ __

Type F3 F2
(Control & Service)

Location (county code) Geo. Loc.

Size of town (use code) G-3

Bed size (not including bassinettes) F-4

Formal training program F-6

Aide or orderly training program F-7

Number of employees - full time __ __ __
(999 = over 1,000)

	Employed Full	Part	Vacancies Full	Part
Number of RN's - General Duty & Charge:	__ __	__ __	__ __	__ __
Number of RN's - Supervisory:	__ __	__ __	__ __	__ __
Number of LPN's - General Duty & Charge:	__ __	__ __	__ __	__ __
Number of Aides:	__ __	__ __	__ __	__ __
Number of Orderlies: (99 = over 100)	__ __	__ __	__ __	__ __

Pay Scale - RN - General Duty:	Min. __ __	Max. __ __
LPN:	Min. __ __	Max. __ __
Aide:	Min. __ __	Max. __ __
Orderly:	Min. __ __	Max. __ __

NOTE: Data recorded by designated code or actual year or number written in.

LICENSURE __ __ __ __ __ ID of EMPLOYMENT LOCATION __ __ __ TYPE __ __

GENERAL INFORMATION

Sex B-2
Race B-3
Where born Geo. Loc.
Year born Geo. Loc.
Where eighth grade Geo. Loc.
Where high school Geo. Loc.
Size high school town C-3
Type h.s. program __
Reas left E 2
Hi gr __ __
P/T work level/area C-2__
Fathers occup h. s. C-2__
Mothers occup h. s. C-2__
Fathers education D-4__
Mothers education D-4__
Sibling pattern E-6
Marital status B-4
Number of children E-4
Year married __ __
Year div/sep/widow __ __
1 2 3 4 5 6 7 8 9 10

RN or PN NURSE TRAINING

School/work C-5
Reason attended E-2__
Where Geo. Loc.
PN school Geo. Loc.
Year started __ __
Number of months __ __
How heard of school E-2
Reason this school E-2__
Number applied to __
Distance to school C-4
Additional emphasis C-2__
Support B-1

CURRENT JOB

Work/school C-5
Super level C-7
Reason this job E-2__/E-2__
Year started __ __
Level/area C-2__
Salary B-5__
Shift B-6
Mobility B-7
Immed super __ __

EDUCATION HISTORY

1. School/work C-5
   Reason attended E 2
   Purpose D-7
   Type of school D-6
   Where Geo. Loc.
   Level/area C 2__
   Year started __ __
   Number of months __ __

2. School/work __
   Reason attended __ __
   Purpose __
   Type of school __
   Where __ __
   Level/area __ __
   Year started __ __
   Number of months __ __

3. School/work __
   Reason attended __ __
   Purpose __
   Type of School __
   Where __
   Level/area __ __
   Year started __ __
   Number of months __ __

7. Work/school __
   Reason this job __ __
   Where __ __
   Year started __ __
   Number of months __ __ __
   Level/area __ __
   Salary __ __

8. Work/school __
   Reason this job -- __
   Where __ __
   Year started __ __
   Number of months __ __ __
   Level/area __ __
   Salary __ __

Total educ attained __ __
Total number of jobs __ __

OCCUPATION HISTORY

1. Work/school C-5
   Reason this job E-2__
   Where Geo. Loc.
   Year started __ __
   Number of Months __ __ __
   Level/area __ __
   Salary B-5__

2. Work/school __
   Reason this job __ __
   Where __ __
   Year started __ __
   Number of months __ __ __
   Level/area __ __
   Salary __ __

3. Work/school __
   Reason this job __ __
   Where __ __
   Year started __ __
   Number of months __ __ __
   Level/area __ __
   Salary __ __

4. Work/school __
   Reason this job __ __
   Where __ __
   Year started __ __
   Number of months __ __ __
   Level/area __ __
   Salary __ __

5. Work/school __
   Reason this job __ __
   Where __ __
   Year started __ __
   Number of months __ __ __
   Level/area __ __
   Salary __ __

6. Work/school __
   Reason this job __ __
   Where __ __
   Year started __ __
   Number of months __ __ __
   Level/area __ __
   Salary __ __

EMPLOYMENT LEVEL/HEALTH AREA CODE

PROFESSIONAL & OTHER
01 Professional (non-health)
02 Professional (health related
Physician, Dentist)
03 Clergy
04 _____
05 Generally requiring of BS
Teacher, Engineer, CPA
06 PN school staff
07 Teacher/counselor - school
08 Empl. Service counselor
09 Housewife
10 Semi-professional (non-health business manager, owner)

HEALTH RELATED OCCUPATIONS
11 R.N.
12 Dietician
13 Pharmacist
14 Medical records librarian
15 Occupational therapist
16 Physio-therapist
17 Psychologist
18 Social worker
19 Other health related

TECHNICAL GENERAL (non-health)
20 Technical
Engineering Aide, Elect. Tech, 2 yr. post H.S. level or equal.) (also used for preclinical instructors)

HEALTH AREAS
21 Doctor's office
22 General duty (bed patients)
23 Geriatrics
24 Medical
25 Medical-surgical
26 Nursing home
27 O. B. - Gynecology
28 Operating room
29 Pediatrics
30 Private duty
31 Psychiatric-mental retardation
32 Public health
33 Surgical
34 T.B. - communicable disceases
35 Ortheopedics
36 Intensive care
37 X-ray, lab, special services, out pt.
38 Emergency room - first aid
39 Medications - pharmacology
40 Other RN - PN duties
41 Administrative-supervisory duties

GENERAL - EMPHASIS
(Most often used for the additional emphasis question)
42 Communications - staff relationships
43 Realistic preparation
44 More academic - theory
45 More clinical experience
46 More specialized treatments-procedure
47 Liberal arts courses (educ. too)
48 Science courses
49 B.S. or acceptance of credits

SKILLED
50 Skilled (non-health)
Machinist, carpenter, crafts
51 Skilled - health related
Lab. tech. X-ray, Med. Tech.
52 Sales - Dept store, appliance, equipment
53 _____
54 Office and clerical secretary
Bookkeeper
55 _____

SEMI-SKILLED
60 Semi-skilled (non-health)
Machine operator, inspector
61 Semi-skilled - health related
Aide, Orderly, unlicensed PN
62 _____
63 _____
64 Office and clerical-typist, file clerk

UNSKILLED
70 Unskilled (non-health)
71 Unskilled - (health related)
housekeeping, janitor, kitchen
72 Sales - dime store & equal
73 Waitress - general

DOMESTIC
80 Domestic (in home, non-health)
81 Domestic (in home, health related)

FARM
90 Farm owner - one section or more (640+)
91 Farm owner - half-section (320-639)
92 Farm owner - less than half section
93 Farm tenant
94 Farm labor
95 Farmer General

SPECIAL
96 _____
97 _____
98 LPN Graduate of this school
99 None

B-4 MARITAL STATUS
0 Unknown
1 Single
2 Married
3 Widowed
4 Separated or divorced
5 Married to church

B-2 SEX
0 Unknown
1 Female
2 Male

B-3 RACE
0 Unknown
1 Caucasian
2 Negro
3 Others

C-9 PERCENT OF TIME
0
1 Full-time
2 Part-time - regularly
3 Part-time - irregular basis
4 Only occasionally

C-6 PRIOR HEALTH EXPERIENCES
0 Unknown
1 Nurse aide or unlicensed P.N.
2 Health related--incidental pt. contact
3 Home health care work
4 Candy striper
5 Adult health volunteer work
6 Student nursing club
7 Red cross - first aid work
8 Other
9 None

E-2 REASONS FOR
00 not applicable
01 Retirement
02 Semi-retirement
03 In RN school
04 RN completed
05 Seeking employment
06
07
08
09
10 **Influence** of others (general)
11 Infl of parents
12 Infl of friends
13 Infl of employer - even if includes RN or Dr.
14 Infl of husband/wife
15 Infl of teacher/counselor (H.S.)
16 Infl of relative
17 Infl of someone in health occup.
18 Infl of RN or above
19 Infl of LPN or below
20 **Illness** of self
21 Ill of family
22 Ill of friend
23 _____
24 _____
25 Marriage (general)
26 Pregnancy
27 Young children in home
28 Rear children
29 _____
30 **Financial** need (general)
31 Finan need of self
32 Finan need of family
33 Finan need of children
34 Finan need to educate self
35 Finan need to educate children
36 _____
37 Econ feasible - educ.
40 **Opportunity** (general)
41 Oppor for education
42 Oppor for training (informal)
43 Oppor for experience
44 Oppor for advancement
45 Oppor for salary increase
46 Oppor for security
47 Oppor to apply previous educ.
48 Oppor to apply previous experience
49 Accredited or felt best school
50 Military (self) use if in service
51 Mil (husband)
52 Mil (children)
53 _____
60 **Mass Media**
61 Governmental agency (MDTA reference)
62 Reference material
65 Geographic location (general)
66 Geographic location (close to home)
67 Geographic location (husband)
70 Job satisfaction (staff)
71 **Job satisfaction** (type)
72 Job satisfaction (location)
73 Job terminated
74 Job available
75 Job educational requirement
76 Job change wanted (just for the sake of something different)
80 **Personal** (general/not reported)
81 Pers desire for education
82 Pers desire to do something productive
83 Pers desire to help people
84 Pers pref for type of institutions
85 Pers pref for nursing (long-standing)
86 Pers pref for work schedule
87 Pers pref for religion
88 Pers pref because clinical exp. here
89 Pers pref for some leisure
90 _____
91 Obligation to use RN -- LPN Trg.

C-4 PRESENT EMPLOYMENT STATUS LPN
0 Unknown
1 LPN full-time general
2 LPN part-time general
3 LPN 20 hrs/wk or less
4 LPN over 40 hrs/wk
5 Other health - FT general
6 Other health - PT general
7 Other non-health - FT
8 Other non-health - PT

C-5 EMPLOYMENT PLANS - LPN
00 Unknown
01 Unemployed - no plans for work
02 PT employment - no plans for FT work
03
Presently Employed
10 Employed FT - will work in future - general
11 Employed FT - will work 6 months
12 Employed FT - will work 6 months - 1 year
13 Employed FT - will work more than 1 year
14 Employed PT - will work in future - general
15 Employed PT - will work 6 months
16 Employed PT - will work 6 months - 1 year
17 Employed PT - will work more than 1 year

Unemployed - Return LPN
20 FT - in future - general
21 FT within 6 months
22 FT within 6 months - 1 year
23 FT within 1 - 3 years
24 PT in future - general
25 PT in future 6 months
26 PT in future 6 months - one year
27 PT in future 1 - 3 years

Unemployed - Return Other
30 FT in future - general
31 FT within 6 months
32 FT within 6 months - 1 year
33 FT within 1 - 3 years
34 PT in future - general
35 PT in future 6 months
36 PT in future - 6 months - 1 year
37 PT in future - 1 - 3 years

PT Employed - Return FT LPN
40 FT in future - General
41 FT in future - 6 months
42 FT in future - 6 months - 1 year
43 FT in future - 1 - 3 years

PT Employed - Return FT Other
50 FT in future - general
51 FT in future - 6 months
52 FT in future - 6 months - 1 year
53 FT in future - 1 - 3 years

E-5 AGES OF CHILDREN
0 No children or unknown
1 All 18 or older
2 All 12 and older
3 All 6 - 11
4 All under 6
5 Most under 6, some 6-11
6 Some under 6, most 6-11
7 Most 6-11, some 12 & older
8 Some 6-11, most 12 & older
9 At least one in each age group

F-2 SERVICE
0 Other
1 Gen. Hosp.
2 Hosp. spec.
3 Psychiatric
4 Ment. retard
5 TB, CD, alcohol, drugs
6 Nsg. Home, Geriatrics
*7 Dr's Office
8 Private duty
9 Public Health Agency
* Doctor's Office-write in:
Personnel in office
M.D.'s ____
R.N.'s ____
L.P.N.'s ____
Office ____
Lab ____
Other ____
Do they perform any lab work or services ____
Is this single office or part of clinic ____
Average number of patient calls per day ____

F-3 CONTROL
0
1 Indiv. emplmt (P.D., Md's Office)
2 Military
3 V.A.
4 State
5 County or Hosp. Dist.
6 City
7 Church
8 Non-profit
9 Proprietary

F-4 BED SIZE
0 not applicable
1 0-25
2 25-49
3 50-99
4 100-149
5 150-199
6 200-299
7 300-399
8 400-499
9 500-Over

F-6 FORMAL TRAINING PROGRAMS
0 None
1 Own R.N.
2 Clinical affiliate for RN
3 Own L.P.N.
4 Clinical affiliate for LPN
5 Own RN & Clinical affiliate for LPN
6 Own LPN & Clinical affiliate for RN
7 Own LPN & RN
8 Clinical affiliate for RN + LPN
9 No nursing education program but have own or are affiliate for other formal program, as M.D., Lab, X-ray

C-7 FUNCTIONS and RESPONSIBILITY
1 Owner
2 Supervisor - 5 or more
3 Supervisor - less than 5
4 Charge
5 Team leader
6 General
7 Medications
8 Treatments
9 Attendant

B-6 SHIFT
1 Day
2 PM
3 Night
4 Rotating
5 Spasmodic

B-7 MOBILITY
1 downward (within)
2 downward (without)
3 horizontal (w/in)
4 horizontal (w/out)
5 stable
6 upward (within)
7 upward (without)

B-8 STATUS-LPN
(State Records)
State Nursing Office Status Code
1 Deceased
2 CIED - Current-In-state resident; Licensed by Education
3 COED - Current-Out-of-state resident; Licensed by Education
4 CIX - Current-In-state resident; Licensed by Experience
5 COX - Current-Out-of state resident; Licensed by Experience
6 IIED - Inactive-In-state resident; Licensed by Education
7 IOED - Inactive-Out-of-state resident; Licensed by Education
8 IIX - Inactive-In-state resident; Licensed by Experience
9 IOX - Inactive-Out-of-state resident; Licensed by Experience

B-9 TYPE OF PN SCHOOL
1 Unknown or not appropriate
Illinois R.N. School -60
Iowa R.N. School -61
Out-of-state P.N. School -62
Out-of-state R.N. School -63
Licensed by experience -39
2 Area Technical School - Vocational
3 High School - Vocational
4 High School - MDTA
5 Junior College - Vocational
6 Junior College - MDTA
7 Hospital
8 University
9 Other (Dixon--Oak Forest)

F-7 AIDE OR ORDERLY TRAINING
0 None
1 On-the-job, incidental, no formal
2 Full-time class 2 weeks or less
3 Full-time class more than 2 weeks
4 Full-time class 2 weeks or less, plus additional formal training
5 Full-time class more than 2 weeks, plus additional formal training
6 Part-time class and part-time work 2 weeks or less
7 Part-time class and part-time work 2 to 4 weeks
8 Part-time class and part-time work 4 to 6 weeks
9 Part-time class and part-time work over 6 weeks

E-4 NUMBER OF CHILDREN
0 Unknown
1
2
3
4
5
6
7
8 or more
9 none

D-10 RANK IN LAST H.S. CLASS
0
1 Top quarter
2 Second quarter
3 Third quarter
4 Bottom quarter

D-2 SIZE OF LAST H.S. CLASS
0
1 Less than 50
2 At least 50 but less than 100
3 At least 100 but less than 300
4 At least 300 but less than 500
5 At least 500

D-3 H.S. GRADES & % EQUIVALENTS
0
1 A (94–100 = 4)
2 B (86–93 = 3)
3 C (78–85 = 2)
4 D (70–77 = 1)

---

5 F (0–69 = 0)

D-5 HIGHEST GRADE COMPLETED
1 8 or less
2 9
3 10
4 11
5 12

E-8 PHYSICAL APPEARANCE
1 Obese
2 Average
3 Thin

E-7 PERSONAL APPEARANCE
1 Excellent
2 Good
3 Fair
4 Poor

E-9 VOICE
1 Pleasant
2 Unpleasant

E-10 GENERAL ALERTNESS
1 Excellent
2 Good
3 Fair
4 Poor

E-3 RELATIONSHIP CODE
0
1 Parent
2 Friend
3 Employer
4 Spouse
5 Child or children
6 Relative
7 Sibling
8 Co-worker
9 Other (person)

D-4 PARENT/SPOUSE EDUCATION ATTAINMENT
0 Unknown - inappropriate
1 Less than 8th grade
2 Completed 8th grade
3 Some high school
4 High school graduate
*5 Some college
*6 College graduate

---

*7 Masters
*8 Masters +
*9 Doctorate
*Write in degree field - majors

D-6 SOURCE OF EDUCATION
1 Public
2 Private
3 Parochial
4 Military
5 OJT
6 Correspondence
7 Adult Education
8 Junior College
9 University or 4 year college

D-7 PURPOSE OR INTENT OF EDUCATION
0 Unknown or not appropriate
1 College directed
2 General
3 Occupationally directed
4 Avocational
5 RN training
6 PN training
7 Aide, orderly or equal
8 Business courses or school
9 Beauty school

B-1 SUPPORT
0 Nuns
1 Spouse or relatives
2 Personal or family savings
3 Loan or scholarship
4 Manpower program or state employment
5 Public aid, ADC or other government agency
6 Current personal earnings
7 MDTA - partial support
8 Stipend
9 Scholarships

E-6 PLACEMENT IN FAMILY
1 Oldest girl-large family
2 Oldest girl-middle family
3 Oldest girl-small family
4 Middle girl-large family
5 Middle girl-middle family
6 Youngest girl-large family
7 Youngest girl-middle family
8 Youngest girl-small family
9 Only girl; only child

C-3 WORK-SCHOOL INVOLVEMENT CODE
0 Out of labor force
1 Unemployed (looking); no school
2 Part-time work; no school
3 Part-time school; no work
4 Part-time work; part-time school
5 Full-time work; no school
6 Full-time school; no work
7 Full-time work; part-time school
8 Full-time school; part-time work
9 Full-time work; full-time school

H-2 DUTIES
0 Other
1 General (team leader)
2 Head or charge
3 Supervisor or assistant
4 Director or asst. nursing service
5 Inservice ed. (hosp)
6 Instructor RN - or asst. inst.
7 Instructor PN - or asst. inst.
8 Coordinator - Ed. Dir.
9 School Nursing

G-3 SIZE OF TOWN
1 Farm, rural, or small town of less than 2,500 people
2 At least 2,500 but less than 5,000
3 At least 5,000 but less than 20,000
4 At least 20,000 but less than 50,000
5 At least 50,000 but less than 100,000
6 At least 100,000 people

G-4 DISTANCE
1 It is this city
2 Less than 25 miles
3 At least 25 but less than 50 miles
4 At least 50 but less than 100 miles
5 At least 100 but less than 200 miles
6 At least 200 miles

H-3 EDUCATION PREPARATION (faculty)
(Write in field - write in majors)
0
1 RN only
2 RN + courses
3 RN BSN
4 RN BA or BS
5 RN BSN + courses
6 RN BACC + courses
7 RN masters in nursing
8 RN, MA, MS, MEd.
9 RN Masters ± combination

D-1 APPLICANT AND/OR STUDENT STATUS CODE
0
1 Application-Preliminary
2 Application-Secondary
3 Application-Completed
4 Enrolled-Part-time
5 Enrolled-Completion Student (from RN program)
6 Enrolled-Full-time
7 Drop-out-Part-time student
8 Drop-out-Completion Student
9 Drop-out-Full-time Student

A-6

B-5 CODE

GROUP	MONTLY	WEEKLY	HOURLY	ANNUALLY
01	Under $83.00	Under $ 19.20	Under $ .48	Under $1,000.00
02	$ 83.01-$125.00	$ 19.21-$ 28.00	$ .49-$ .72	$1,000.01-$1,500.00
03	$125.01-$167.00	$ 28.01-$ 38.00	$ .73-$ .95	$1,500.01-$2,000.00
04	$165.01-$208.00	$ 38.01-$ 48.00	$ .95-$1.20	$2,000.01-$2,500.00
05	$208.01-$250.00	$ 48.01-$ 58.00	$1.21-$1.44	$2,500.01-$3,000.00
06	$250.01-$292.00	$ 58.01-$ 65.00	$1.45-$1.68	$3,000.01-$3,500.00
07	$292.01-$333.00	$ 65.01-$ 77.00	$1.69-$1.98	$3,500.01-$4,000.00
08	$333.01-$375.00	$ 77.01-$ 86.00	$1.99-$2.16	$4,000.01-$4,500.00
09	$375.01-$417.00	$ 86.01-$ 96.00	$2.17-$2.40	$4,500.01-$5,000.00
10	$417.01-$458.00	$ 98.01-$105.00	$2.41-$2.64	$5,000.01-$5,500.00
11	$458.01-$500.00	$105.01-$115.00	$2.65-$2.88	$5,500.01-$6,000.00
12	$500.01-$542.00	$115.01-$125.00	$2.89-$3.12	$6,000.01-$6,500.00
13	$542.01-$583.00	$125.01-$134.00	$3.13-$3.36	$6,500.01-$7,000.00
14	$583.01-$625.00	$134.01-$144.00	$3137-$3.60	$7,000.01-$7,500.00
15	$625.01-$667.00	$144.01-$153.00	$3.61-$3.84	$7,500.01-$8,000.00
16	$667.01-$708.00	$153.01-$163.00	$3.85-$4.08	$8,000.01-$8,500.00
17	$708.01-$750.00	$163.01-$173.00	$4.09-$4.32	$8,500.01-$9,000.00
18	$850.01-$92.00	$173.01-$182.00	$4.33-$4.55	$9,000.01-$9,500.00
19	$792.01-$833.00	$182.01-$192.00	$4.56-$4.55	$9,500.01-$10,000.00
20	$833.01-$875.00	$192.01-$201.00	$4.80-$5.03	$10,000.01-$10,500.00
21	$875.01-$917.00	$201.01-$211.00	$5.04-$5.27	$10,500.01-$11,000.00
22	$917.01-$958.00	$211.01-$221.00	$5.28-$5.51	$11,000.01-$11,500.00
23	$958.01-$1,000.00	$221.01-$230.00	$5.52-$5.75	$11,500.01-$12,000.00
24	$1,000.01 -------	$230.01 ------	$5.76 ------	$12,000.01 ------

APPENDIX B

LPN CHARACTERISTICS AND CURRENT JOB DETAILED TABLES

TABLE B.1: YEARS SINCE PN TRAINING VS YEARS ON CURRENT JOB BY AGE AND MARITAL STATUS

Age Group	No. of Years on Current Job	NUMBER OF YEARS SINCE PN TRAINING — Single 1	2	3	4	5	6	7	8+	Married 1	2	3	4	5	6	7	8+	Head of Household 1	2	3	4	5	6	7	8+	TOTALS N	%
	6 Mo.	5	7	3							2	1	2		1											20	13.2
20 to	1 Yr.		37	4	2	2					12	7	3	1							2					75	49.9
24	2 "			23	3		1					6	3	2						1						38	25.2
	3 "				3	1							3													7	4.6
	4 "					7																				7	4.6
	5 "						2								1											3	1.9
	6+"																									1	0.6
Sub-Total		5	42	35	8	10	3	0	0	0	14	14	11	3	2	0		0	0	1	2	0	0	0	0	151	100.0
	6 Mo.	1	1								1									1						4	4.2
25 to	1 Yr.		1	1	1	4	1		1		14	2	2	3	2	2	2		5	1					1	42	43.8
29	2 "			3		1	1					7	2		2	1	1			4					1	24	25.0
	3 "						1						2	2		1										6	6.2
	4 "					2											2					2				6	6.2
	5 "						1								2		1								1	5	5.2
	6+"							1								3	4								1	9	9.4
Sub-Total		1	2	4	1	7	4	1	1	0	15	9	6	5	6	7	10	0	5	6	0	2	0	0	4	96	100.0
	6 Mo.																								1	1	1.7
30 to	1 Yr.							1	1		6	1	1	2			4		1	2				1		19	32.8
34	2 "			2								2		1			4							1		10	17.2
	3 "						1						1		1	2	1									6	10.3
	4 "													2		1	4					1				8	13.8
	5 "								1						2		1									4	6.9
	6+"								1							2	6								1	10	17.3
Sub-Total			0	2	0	0	1	1	3	0	6	3	2	5	3	5	20	0	1	2	0	1	0	1	2	58	100.0
	6 Mo.									1							2									3	4.3
35 to	1 Yr.		2						1		7	1	1	1		1	3		4	2		1			1	22	31.4
39	2 "			2	1				1			2	1	1			3							1	2	15	21.4
	3 "												4	1			1									8	11.4
	4 "													1								1	1			3	4.3
	5 "														1		2									3	4.3
	6+"								2							3	8								3	16	22.9
Sub-Total		0	2	2	1	0	0	0	4	1	7	3	6	4	1	4	19	0	4	2	0	2	1	1	6	70	100.0
	6 Mo.											1														1	1.5
40 to	1 Yr.							1			10	3		1			3		2							19	27.9
44	2 "											4	1				2			1	1				1	11	16.2
	3 "												4	1			3				1			1	1	11	16.2
	4 "						1							2		1	1					1				5	7.4
	5 "						1								3	1										5	7.3
	6+"															3	10							1	2	16	23.0
Sub-Total		0	0	0	0	0	2	1	0	0	10	8	5	4	3	5	19	0	2	1	2	0	0	2	4	68	100.0
	6 Mo.									1	1					1								1	2	7	8.1
45 to	1 Yr.								1		7	2		2			5		2		1				2	22	25.3
49	2 "			1								8								2				1		12	13.7
	3 "					1							3	1			1				1		1	1		9	10.4
	4 "													4	1		2					1				8	9.2
	5 "														3		1						1			5	5.7
	6+"								5							3	11								5	24	27.6
Sub-Total		0	0	1	0	1	0	0	6	1	8	10	3	8	4	4	20	0	2	2	2	1	2	3	9	87	100.0
	6 Mo.																									0	0.0
50 to	1 Yr.										3		1			1	1		4	3					2	15	16.9
54	2 "								1			6		1			5			1	1	1			1	17	19.1
	3 "												5	1		1	1				2			3		13	14.6
	4 "													1			3					1	1		1	7	7.8
	5 "														3	1	2						1		2	9	10.1
	6+"								1					1		3	15							2	6	28	31.5
Sub-Total		0	0	0	0	0	0	0	2	0	3	6	6	4	3	6	27	0	4	4	3	2	2	5	12	89	100.0
	6 Mo.																								1	1	1.5
55 and	1 Yr.										1	1	1				1		1	1					1	7	10.4
over	2 "								1			3			2	1	2			1		1			1	12	17.9
	3 "												2			1	1								1	5	7.5
	4 "					1								2			3									6	9.0
	5 "														1		1								1	3	4.5
	6+"								2							4	16							1	10	33	49.2
Sub-Total		0	0	0	0	1	0	0	3	0	1	4	3	2	3	6	24	0	1	2	0	1	0	1	15	67	100.0
TOTAL N		6	46	44	10	19	10	3	19	2	64	57	42	35	25	37	140	0	19	20	9	9	5	13	52	686	
TOTAL %		0.9	6.7	6.4	1.5	2.8	1.5	0.4	2.8	0.3	9.3	8.3	6.1	5.1	3.6	5.4	20.4	0	2.8	2.9	1.3	1.3	0.7	1.9	7.6	100.0	

TABLE B-2: TYPE OF DUTY BY AGE AND MARITAL STATUS

AGE GROUP	MARITAL STATUS	Dr.'s Office	Gen'l Duty	Geriatrics	Medical	Med-Surg	Nsg Home	O.B.-Gyn	Oper. Room	Pediatrics	Private Duty	Psychiatric	Publ. Health	Surgical	Comm. Disease	Orthopedics	Intensive Care	X-Ray, Lab., Spec. Service	Other Duties	TOTAL BY AGE GROUP N	%
24 or Younger	S*	0	3	1	13	19	0	18	4	11	0	1	0	23	0	6	2	2	0	103	68.2
	M	1	4	3	7	3	3	3	2	6	0	2	0	7	0	2	0	1	1	45	29.8
	H	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	3	2.0
Sub-Total		1	7	5	20	22	3	21	6	18	0	3	0	30	0	8	3	3	1	151	100.0
% Age Group		0.7	4.6	3.3	13.2	15.2	1.9	13.9	3.9	11.9	0	1.9	0	19.8	0	5.2	2.0	2.0	0.7		
25 to 29	S	0	2	1	7	1	0	3	1	2	1	0	0	2	0	1	0	0	0	21	21.9
	M	1	4	2	12	10	2	5	1	5	1	1	0	9	0	1	2	2	0	58	60.4
	H	0	0	1	2	3	0	3	1	2	0	1	0	3	0	1	0	0	0	17	17.7
Sub-Total		1	6	4	21	14	2	11	3	9	2	2	0	14	0	3	2	2	0	96	100.0
% Age Group		1.0	6.2	4.2	21.9	14.6	2.1	11.4	3.1	9.4	2.1	2.1	0	14.6	0	3.1	2.1	2.1	0		
30 to 34	S	0	0	0	0	1	0	0	1	2	0	0	1	1	0	1	0	0	0	7	12.1
	M	0	1	5	7	5	2	3	0	4	0	1	0	7	0	2	3	3	1	44	75.8
	H	0	0	0	1	1	0	2	0	2	0	0	0	1	0	0	0	0	0	7	12.1
Sub-Total		0	1	5	8	7	2	5	1	8	0	1	1	9	0	3	3	3	1	58	100.0
% Age Group		0	1.7	8.6	13.8	12.1	3.5	8.6	1.7	13.8	0	1.7	1.7	15.5	0	5.2	5.2	5.2	1.7		
35 to 39	S	0	0	0	1	2	1	1	1	2	0	0	0	1	0	0	0	0	0	9	12.8
	M	0	3	5	7	2	1	2	0	5	0	5	0	9	0	1	3	1	1	45	64.3
	H	0	2	0	0	1	0	1	0	0	1	1	0	5	0	1	3	0	1	16	22.9
Sub-Total		0	5	5	8	5	2	4	1	7	1	6	0	15	0	2	6	1	2	70	100.0
% Age Group		0	7.1	7.1	11.4	7.1	2.9	5.7	1.4	10.0	1.4	8.6	0	21.5	0	2.9	8.6	1.4	2.9		
40 to 44	S	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	3	4.4
	M	3	2	1	11	8	2	6	1	6	0	3	3	3	0	1	0	3	1	54	79.4
	H	1	0	0	3	1	1	0	1	0	1	2	0	1	0	0	0	0	0	11	16.2
Sub-Total		4	2	1	14	9	4	7	2	6	1	5	3	4	0	2	0	3	1	68	100.0
% Age Group		5.9	2.9	1.5	20.6	13.2	5.9	10.3	2.9	8.8	1.5	7.4	4.4	5.9	0	2.9	0	4.4	1.5		
45 to 49	S	0	2	1	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0	8	8.2
	M	0	8	1	8	5	0	9	5	1	1	0	4	6	0	2	6	0	2	58	66.7
	H	0	1	1	4	3	0	0	3	2	1	0	2	2	1	0	0	0	1	21	24.1
Sub-Total		0	11	3	14	9	0	11	8	3	2	0	6	8	1	2	6	0	3	87	100.0
% Age Group		0	12.6	3.4	16.1	10.3	0	12.7	9.2	3.4	2.3	0	7.0	9.2	1.1	2.3	7.0	0	3.4		
50 to 54	S	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	2.2
	M	0	5	7	5	8	2	3	1	4	3	6	3	3	2	0	2	1	0	55	[illegible]
	H	1	2	2	3	7	0	2	0	5	0	4	1	1	0	2	1	0	1	32	90.0
Sub-Total		1	7	10	8	15	3	5	1	9	3	10	4	4	2	2	3	1	1	89	100.0
% Age Group		1.1	7.9	11.2	9.0	17.0	3.4	5.6	1.1	10.1	3.4	11.2	4.5	4.5	2.2	2.2	3.4	1.1	1.1		
55 and Over	S	0	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4	6.0
	M	0	5	2	6	10	1	1	0	6	0	1	2	4	0	1	2	0	2	43	64.2
	H	0	3	3	1	5	0	1	1	1	0	0	2	0	0	0	2	1	0	20	29.8
Sub-Total		0	8	7	7	16	2	2	1	7	0	1	4	4	0	1	4	1	2	67	100.0
% Age Group		0.0	11.9	10.4	10.4	23.9	3.0	3.0	1.5	10.4	0.0	1.5	6.0	6.0	0.0	1.5	6.0	1.5	3.0		
GRAND TOTAL		7	47	40	100	97	18	66	23	67	9	28	18	88	3	23	27	14	11	686	100.0
% CATEGORY		1.0	6.8	5.8	14.6	14.1	2.7	9.6	3.4	9.8	1.3	4.1	2.7	12.8	0.4	3.4	3.9	2.0	1.6		

*S = Single

M = Married

H = Head of Household

TABLE B-3 REASONS FOR CURRENT JOB BY AGE AND MARITAL STATUS - LPN's

		INFLUENCE								FAMILY			FINANCIAL NEEDS					GEOGRAPHIC		
Age Group	Marital Status	Parents	Friend	Employer	Spouse	Relative	Person in Health Occup	RN or Above	LPN or Below	Ill. Self	Ill. Family	Marriage	General	Self	Family	Educate Self	Educate Children	Mass Media	General	Close to Home
	Single	4	3	0	0			1	2		0	0				0			5	12
20	Married	0	1	1	5			1	0		1	1				1			0	5
to	H of H	0	0	0	0			0	0		0	0				0			0	0
24	Sub-Total	4	4	1	5			2	2		1	1				1			5	17
% Age Group		2.6	2.6	0.7	3.3			1.3	1.3		0.7	0.7				0.7			3.3	11.3
	Single	0	0	1	0	1		2	0	1		0						0		5
25	Married	1	1	1	1	0		1	1	0		1						0		11
to	H of H	0	0	1	0	0		0	1	0		0						1		1
29	Sub-Total	1	1	3	1	1		3	2	1		1						1		17
% Age Group		1.0	1.0	3.2	1.0	1.0		3.1	2.1	1.0		1.0						1.1		17.7
	Single		0			0		1	0			0				0			0	1
30	Married		2			0		0	2			1				1			1	4
to	H of H		0			2		1	0			0				0			0	0
34	Sub-Total		2			2		2	2			1				1			1	5
% Age Group			3.5			3.5		3.5	3.5			1.7				1.7			1.7	8.6
	Single		1	1		0		0	0							0				1
35	Married		0	1		1		0	2							0				6
to	H of H		0	0		0		2	0							1				1
39	Sub-Total		1	2		1		2	2							1				8
% Age Group			1.4	2.9		1.4		2.9	2.9							1.4				11.5
	Single		0	0	0	0		0					1			0				0
40	Married		1	1	1	0		1					1			1				5
to	H of H		0	1	0	1		0					0			0				1
44	Sub-Total		1	2	1	1		1					2			1				6
% Age Group			1.4	2.9	1.4	1.4		1.4					2.9			1.4				8.8
	Single			1		1	0	0	0							0	0	0		0
45 t	Married			2		0	0	3	2							1	1	1		8
to	H of H			1		0	1	2	0							1	0	0		1
49	Sub-Total			4		1	1	5	2							2	1	1		9
% Age Group				4.6		1.2	1.2	5.7	2.3							2.3	1.5	1.1		10.3
	Single		0	0		0		0	0	0			0	0		0				0
50	Married		1	1		1		3	1	2			2	1		1				5
to	H of H		0	2		2		4	1	1			0	0		0				1
54	Sub-Total		1	3		3		7	2	3			2	1		1				6
% Age Group			1.1	3.4		3.4		7.9	2.3	3.4			2.3	1.1		1.1				6.7
	Single		0	0		0	0	0	0	0					1					0
55	Married		2	1		1	1	2	1	0					0					6
and	H of H		0	1		0	0	1	1	1					0					1
over	Sub-Total		2	2		1	1	3	2	1					1					7
% Age Group			3.0	3.0		1.5	1.5	4.5	3.0	1.5					1.5					10.4
GRAND TOTAL	N	5	12	17	7	10	2	25	14	5	1	3	4	1	1	7	1	2	6	75
	%	0.7	1.8	2.5	1.0	1.5	0.3	3.6	2.0	0.7	0.2	0.4	0.6	0.2	0.2	1.0	0.2	0.3	0.9	10.9

TABLE B-3: REASONS FOR CURRENT JOB BY AGE AND MARITAL STATUS (Continued)
LPN's

Age Group	Marital Status	OPPORTUNITY: General	Education	Training	Experience	Advancement	Salary Adv.	Security	Apply Previous Education	Apply Previous Experience	SATISFACTION: Staff	Type	Location	Job Terminated	Job Available	PREFERENCE: General	Education	Outside Activity	Type of Job	Type of Instit.	Nursing	Work Schedule	Religion	Instit.Clin/Exp. PN Training	Leisure	TOTALS N	TOTALS %
	Single			0	7		5		2	4	1		1		1	1	1		11	6	0	2	3	31		103	68.2
20	Married			1	1		2		0	1	1		2		0	1	0		4	4	1	1	1	9		45	29.8
to	H of H			0	0		2		0	0	0		0		0	0	0		0	0	0	0	0	1		3	2.0
24	Sub-Total			1	8		9		2	5	2		3		1	2	1		15	10	1	3	4	41		151	100.0
% Age Group				0.7	5.3		5.9		1.3	3.3	1.3		2.0		0.7	1.3	0.7		9.9	6.6	0.7	2.0	2.6	27.2			
	Single				1		0	0	0	1		0		0	0	0			2	2		1	0	4		21	21.9
25	Married				3		5	1	1	0		2		1	4	1			5	6		1	1	9		58	60.4
to	H of H				0		1	0	0	0		0		1	1	0			0	2		3	0	5		17	17.7
29	Sub-Total				4		6	1	1	1		2		2	5	1			7	10		5	1	18		96	100.0
% Age Group					4.2		6.2	1.0	1.1	1.1		2.1		2.1	5.2	1.1			7.3	10.4		5.2	1.1	18.7			
	Single	0	0	0	0		2			0	0	0			1	0		0	1	0		1		0		7	12.1
30	Married	1	1	1	1		4			3	2	1			2	1		1	3	1		3		8		44	75.8
to	H of H	0	0	0	0		1			0	1	0			0	0		0	0	0		1		1		7	12.1
34	Sub-Total	1	1	1	1		7			3	3	1			3	1		1	4	1		5		9		58	100.0
% Age Group		1.7	1.7	1.7	1.7		12.2			5.2	5.1	1.7			5.2	1.7		1.7	6.9	1.7		8.6		15.5			
	Single		0		0		0	0		0	0	0		0	0	1		0	0	1		0	1	3		9	12.8
35	Married		1		2		3	1		2	1	2		1	5	0		2	4	2		2	0	7		45	64.3
to	H of H		0		0		2	0		2	0	0		0	2	1		0	0	1		2	0	2		16	22.9
39	Sub-Total		1		2		5	1		4	1	2		1	7	2		2	4	4		4	1	12		70	100.0
% Age Group			1.4		2.9		7.1	1.4		5.7	1.4	2.9		1.4	10.0	2.9		2.9	5.7	5.7		5.7	1.4	17.1			
	Single			0	0	0	0	0	0	0	0	0	1	0	0				0	0		0	0	1		3	4.5
40	Married			1	2	1	6	0	2	1	2	2	0	1	4				5	2		4	1	9		54	79.1
to	H of H			0	0	0	2	2	0	1	0	0	0	0	1				1	0		1	0	0		11	16.4
44	Sub-Total			1	2	1	8	2	2	2	2	2	1	1	5				6	2		5	1	10		68	100.0
% Age Group				1.6	2.9	1.6	11.8	2.9	2.9	2.9	2.9	2.9	1.4	1.4	7.4				8.8	2.9		7.4	1.4	15.7			
	Single			0	0	0	1		0	0	0	0	1		0	0		0	0	1		0		3		8	8.2
45	Married			1	1	1	0		3	2	0	1	2		1	1		0	6	4		3		14		58	66.7
to	H of H			1	2	0	2		0	0	1	2	0		0	2		1	0	0		1		3		21	24.1
49	Sub-Total			2	3	1	3		3	2	1	3	3		1	3		1	6	5		4		20		87	100.0
% Age Group				2.3	3.4	1.2	3.4		3.4	2.3	1.1	3.4	3.4		1.1	3.4		1.1	6.9	5.7		4.6		23.0			
	Single			0	0	1	0	0	0	0	0	0	0	0	1	0		0	0	0		0	0	0		2	2.2
50	Married			0	1	1	3	1	1	2	1	1	1	1	1	0		3	4	5		3	0	8		55	61.8
to	H of H			1	1	0	3	0	0	2	2	3	0	0	1	1		0	1	1		1	1	3		32	36.0
54	Sub-Total			1	2	2	6	1	1	4	3	4	1	1	3	1		3	5	6		4	1	11		89	100.0
% Age Group				1.1	2.3	2.2	6.7	1.1	1.1	4.5	3.4	4.5	1.1	1.1	3.4	1.1		3.4	5.6	6.7		4.5	1.1	12.4			
	Single		0	0	1	0	0	0	0	0	0		0		0			1	0	0		0		1	0	4	6.0
55	Married		2	0	0	1	3	0	1	2	2		0		1			2	1	3		2		8	1	43	64.2
and	H of H		0	1	1	0	2	1	0	0	1		1		0			1	0	0		1		6	0	20	29.8
over	Sub-Total		2	1	2	1	5	1	1	2	3		1		1			4	1	3		3		15	1	67	100.0
% Age Group			3.0	1.5	3.0	1.5	7.5	1.5	1.5	3.0	4.4		1.5		1.5			6.	1.5	4.4		4.4		22.4	1.5		
GRAND TOTAL N		1	4	7	24	5	49	6	10	23	15	14	9	5	26	10	1	11	48	41	1	33	8	136	1	686	
%		0.2	0.6	1.0	3.5	0.7	7.1	0.9	1.5	3.3	2.2	2.0	1.3	0.7	3.8	1.5	0.1	1.6	7.0	6.0	0.1	4.8	1.2	19.8	0.1		100.0

TABLE B-4: EVALUATION OF CURRENT JOB BY DUTY ASSIGNMENT

Present Position	Unable to Say	Downward Within	Downward Without	Horiz. Within	Horiz. Without	Upward Within	Upward Without	TOTAL N	TOTAL %
General Duty	11	1	1	3	6	9	16	47	6.8
Geriatrics	9	1	1	5	10	3	11	40	5.8
Medical	30	0	5	8	15	8	35	101	14.7
Med-Surg.	31	1	4	13	18	6	24	97	14.1
Nursing Home	3	1	2	0	2	1	10	19	2.8
OB-Gyn.	27	0	4	2	7	10	16	66	9.6
OR.	4	0	1	5	2	3	8	23	3.3
Pediatrics	23	1	1	3	10	8	21	67	9.7
Private Duty	1	0	1	1	3	1	2	9	1.3
Psychiatric	6	0	0	2	3	4	13	28	4.1
Public Health	4	2	0	1	6	0	5	18	2.6
Surgical	30	2	0	4	15	5	32	88	12.8
TB-Comm.Disease	1	0	0	1	0	1	0	3	.4
Orthopedics	8	0	1	2	3	1	9	23	3.3
Intensive Care	6	0	1	10	0	8	2	27	3.9
X-ray,Lab, Special Services	0	0	0	3	2	1	8	14	2.0
Other PN	3	0	0	0	0	5	3	11	1.6
Doctor's Office	0	0	0	0	0	2	5	7	1.0
TOTAL	197	9	22	59	105	76	220	688	100.0

APPENDIX C

FUNCTION STATEMENTS

AND

RESPONSIBILITY FOR PERFORMANCE

TABLES BY STATE, LEVEL OF

NURSING AND GENERAL HOSPITALS

TABLE C.1: FUNCTION STATMENTS

1
Take x-ray pictures.

2
Collect a speciman, such as:

sputum urine stool

3
Scrub for surgery or delivery.

4
Perform a urine analysis for sugar.

5
Apply body restraint, such as:

posey belt wristlets

6
Take the fetal heart tone.

7
Select roommates for patients.

8
Remove potentially hazardous objects such as glassware, razor, or belts from a depressed patient.

9
Strain urine for stones.

10
Circulate in operating room or delivery room.

11
Perform a complete urine analysis, including specific gravity and microscopic examination.

12
Perform rectal examination of patient, such as:

patient in labor

patient with fecal impaction

13
Assist patient in recreational or occupational therapy, such as:

encouragement

physical help

14
Insert tube and collect gastric analysis specimen.

14a *
Change a surgical dressing

15
Conduct a planned in-service program.

16
Prepare either patient or facilities for religious rites at the bedside

TABLE C.1: FUNCTION STATEMENTS (Continued)

17
Discontinue I.V. solutions.

18
Massage fundus of newly delivered mother.

19
Insert rectal or vaginal suppositories.

20
Wash drinking or medicine glasses in kitchenette on nursing unit.

21
Apply an arm sling.

22
Start an I.V. solution.

23
Make infant formula.

24
Take an electro-cardiograph recording of a patient.

25
Observe vital signs following a general anesthesia.

26
Give a routine shampoo to patient.

27
Give a bath or a treatment to a patient in a croupette or oxygen tent.

28
Remove a nasal pack.

29
Bathe patient or help patient to bathe (in bed, tub, shower).

30
Employ or discharge personnel such as other nurses, nurse aides, house keepers, or orderlies.

31
Regulate temperature or ventilation in patient's room.

32
Remove fecal impaction.

33
Use isolation technique for a patient having an infectious or communicable disease <u>including care</u> of:

body discharges
utensils
linens

34
Record on individual patient chart observations made or treatments given by you.

TABLE C.1: FUNCTION STATEMENTS (Continued)

35
Give urinary bladder instillations or irrigations.

36
Change the prescribed diet of a sick person, such as:

liquid to soft
soft to solid
solid to liquid

36a *
Observe and report drainage on a dressing.

37
Supervise student practical nurses.

38
Insert indwelling catheter.

39
Obtain signatures for legal documents, such as permission to operate, consent for autopsy, perform tests, or wills.

40
Obtain an apical pulse.

41
Instruct patient to deep breathe.

42
Catheterize patient.

43
Adjust apparatus of a patient in traction, such as: orthopedic neck pelvic

44
Give oral hygiene to the unconscious patient.

45
Assist during procedures such as:

thoracentesis

lumbar puncture

46
Apply tourniquet to extremity for control of hemorrhage.

47
Teach prenatal classes.

48
Attend nursing unit report to receive condition and status of patients.

49
"Pour" and give oral medications.

50
Operate autoclave to sterilize instruments or treatment pads.

51
Fill out requisitions to special departments such as laboratory or x-ray.

TABLE C.1: FUNCTION STATEMENTS (Continued)

52
Give oral hygiene to the patient with a fractured jaw.

53
Obtain temperature, pulse, and respirations.

54
Make patient assignments to other nursing personnel.

55
Prepare and position patient to eat.

56
Take blood pressure.

57
Apply side rails to a bed of a patient who becomes confused.

58
Disinfect bathroom and toilet.

59
Give nursing care (not necessarily medications) to a patient following cataract or retinal surgery.

60
Teach a person to inject his own insulin.

61
Add additional I.V. solution to continuous I.V. solution or transfusion.

62
Assist patient in postural drainage.

63
Prepare meals for patients in the main food preparation center, or operate equipment in main kitchen area, such as dish washer.

64
Conduct mental health group therapy sessions.

65
Regulate flow of blood transfusions.

66
Move patient such as:

bed to/from chair

cart to/from chair

67
Apply and remove artificial limb.

68
Make occupied or unoccupied beds, such as:

open surgical

closed open toed

TABLE C.1: FUNCTION STATEMENTS (Continued)

69
Give breast and nipple care to the new mother.

70
Prepare and serve between-meal nourishment.

71
Administer vaginal douche.

72
Complete and sign incident or unusual report forms.

73
Give subcutaneous injections.

74
Admit patient to nursing unit and obtain initial nurse's notes chart information.

75
Set up equipment for aseptic surgical procedures in locations other than operating room, such as:

blood exchange paracentesis circumcision
oral surgery minor surgery

76
Compute fractional doses of medicine.

77
Give an enema, such as:

soap suds tab water oil retention

78
Administer special sensory tests, such as hearing or vision tests.

79
Note and transcribe doctor's orders on medicine cards, Kardex, etc.

80
Make substitutions within the prescribed diabetic diet according to patient's appetite.

81
Give intramuscular injections.

82
Complete newborn nursery admission procedure, such as:

footprints weight bath

83
Irrigate eye, ear, or nose.

84
Help the patient plan for special diets, such as:

low salt high-low calorie
diabetic low fat

85
Assist the physician with rounds.

TABLE C.1: FUNCTION STATEMENTS (Continued)

86
Select appropriate size, type, and position of bed for patient safety and activity.

87
Record condition of the skin or discharges, such as:

appearance odor color

88
Refer a patient to an outside agency, such as: health social religious

89
Clean a discharged patient's unit.

90
Record intake and output for an 8 hour or 24 hour period.

91
Administer immunization, such as:

smallpox	tetanus
diphtheria	T.B.
polio	allergy

92
Explain the current condition of a patient to the immediate family.

93
Take verbal medication or treatment order from doctor.

94
Instill medication for the eye, ear or nose.

95
Dust floor in patient's room.

96
Instruct paralyzed patient how to establish pattern for habit formation of elimination.

97
Refer patient to an agency inside the hospital, such as:

social service chaplain

98
Observe condition of the skin or body discharges, such as:

color odor appearance

99
Check functioning of tubes for patient with chest tube drainage.

a* Used in Phase II of the Study in place of the original function.

Table C.2: COMBINED (Illinois and Iowa) RESPONSIBILITY SORT and TEST OF AGREEMENT OF 129 PAIRED LPN^s and RN^s

(a = 688 LPN^s, b = 129 LPN^s, C - 129 RN^s)

FUNCTION		VALUE 1	2	3	4
* 1	a	4	3	2	679
	b	1	0	0	128
	c	1	0	1	127
	**df = 2, X^2 = 63.2, C = .011				
* 3	a	66	38	33	551
	b	11	8	4	106
	c	7	6	5	111
	df = 9, X^2,= 20.9, C = .484				
5	a	395	164	32	97
	b	75	32	8	14
	c	68	40	7	14
	df = 9, X^2 = 15.0, C = .386				
* 7	a	88	60	32	508
	b	17	8	11	93
	c	10	20	14	85
	df = 9, X^2 = 20.0, C = .449				
* 9	a	403	71	6	208
	b	81	14	1	33
	c	79	18	2	30
	df = 9, X^2 = 49.1, C = .493				
*11	a	13	7	9	659
	b	1	2	1	125
	c	2	0	1	126
	df = 6, X^2 = 115.9, C = .276				
13	a	428	77	9	174
	b	81	14	4	30
	c	73	24	1	31
	df = 9, X^2 = 13.5, C = .331				
*15	a	29	31	20	608
	b	7	5	5	112
	c	1	4	8	116
	df = 9, X^2 = 17.1, C = .218				

FUNCTION		VALUE 1	2	3	4
2	a	572	75	3	38
	b	110	15	0	4
	c	109	16	1	3
	df = 6, X^2 = 12.1, C = .314				
4	a	462	57	1	168
	b	85	13	0	31
	c	89	17	2	21
	df = 6, X^2 = 4.7, C = .231				
6	a	116	55	29	488
	b	22	11	5	91
	c	7	4	5	113
	df = 9, X^2 = 5.6, C = .311				
* 8	a	463	95	8	122
	b	97	14	0	18
	c	68	36	5	20
	df = 6, X^2 = 16.1, C = .375				
10	a	47	42	42	557
	b	10	9	6	104
	c	3	8	6	112
	df = 9, X^2 = 11.2, C = .397				
12	a	166	96	29	397
	b	30	20	6	73
	c	24	14	0	81
	df = 9, X^2 = 11.6, C = .354				
14	a	31	23	20	605
	b	7	8	8	106
	c	1	3	10	115
	df = 9, X^2 = 16.3, C = .428				
16	a	361	89	17	221
	b	71	17	5	36
	c	61	22	6	40
	df = 9, X^2 = 15.4, C = .397				

**Degrees of freedom (df) may range from 0 to 9 due to cells with zero frequencies. The chi-square (X^2) indicated has been adjusted for small frequency cells. Contingency coefficient (C) was used to find the degree of relationship between the two sets of observations. Maximum value for C when using a 4 x 4 table is .866.

*Significant values for chi-square at .05 level of significance:

df	X^2
1	3.8
2	6.0
4	9.5
6	12.6
9	16.9

Table C.2: COMBINED (Illinois and Iowa) RESPONSIBILITY SORT
(Continued)

FUNCTION		VALUE 1	2	3	4
17	a	370	146	26	146
	b	76	25	5	23
	c	49	45	6	29
	df = 9, X^2 = 14.7, C = .369				
* 19	a	379	132	17	160
	b	77	26	5	21
	c	52	36	11	30
	df = 9, X^2 = 27.8, C = .466				
* 21	a	409	102	29	148
	b	82	20	5	22
	c	63	34	10	22
	df = 9, X^2 = 18.4, C = .407				
23	a	75	38	27	548
	b	15	5	7	102
	c	7	8	5	109
	df = 9, X^2 = 4.9, C = .272				
* 25	a	382	133	14	159
	b	70	31	4	24
	c	61	38	9	21
	df = 9, X^2 = 27.9, C = .460				
* 27	a	378	92	6	212
	b	74	20	1	34
	c	62	29	4	34
	df = 9, X^2 = 18.6, C = .329				
* 29	a	555	34	0	99
	b	109	7	0	13
	c	105	9	0	15
	df = 4, X^2 = 43.2, C = .539				
* 31	a	546	36	3	103
	b	99	9	0	21
	c	105	11	1	12
	df = 6, X^2 = 23.5, C = .411				
* 33	a	470	103	18	97
	b	93	19	1	16
	c	61	46	5	17
	df = 9, X^2 = 34.3, C = .472				
* 35	a	343	144	30	171
	b	64	32	8	25
	c	42	48	88	31
	df = 9, X^2 = 21.3, C = .418				

FUNCTION		VALUE 1	2	3	4
* 18	a	123	56	23	486
	b	22	10	3	94
	c	7	8	6	108
	df = 9, X^2 = 20.0, C = .431				
* 20	a	336	14	0	338
	b	66	3	0	60
	c	73	3	0	53
	df = 4, X^2 = 12.5, C = .285				
* 22	a	10	5	11	662
	b	3	0	3	123
	c	0	1	1	127
	df = 4, X^2 = 39.7, C = .497				
* 24	a	9	4	2	673
	b	2	1	0	126
	c	0	0	0	129
	df = 0, X^2 = .38, C = .000				
* 26	a	382	69	12	225
	b	85	13	2	29
	c	88	9	1	31
	df = 9, X^2 = 41.3, C = .462				
28	a	38	60	57	553
	b	8	16	10	95
	c	4	7	5	113
	df = 9, X^2 = 5.7, C = .350				
* 30	a	16	8	6	658
	b	1	1	0	127
	c	0	1	0	128
	df = 2, X^2 = 63.2, C = .11				
* 32	a	300	107	28	253
	b	61	20	5	43
	c	45	28	7	49
	df = 9, X^2 = 49.6, C = .558				
34	a	562	70	7	49
	b	105	14	1	9
	c	76	28	6	19
	df = 9, X^2 = 12.4, C = .293				
36	a	75	86	69	585
	b	11	16	17	85
	c	11	19	25	74
	df = 9, X^2 = 3.6, C = .243				

Table C.2: COMBINED (Illinois and Iowa) RESPONSIBILITY SORT
(Continued)

FUNCTION		VALUE 1	2	3	4
* 37	a	44	40	19	585
	b	9	9	1	110
	c	1	8	10	110
	df = 9, X^2 = 45.5, C = .377				
39	a	139	103	58	388
	b	23	21	14	71
	c	14	11	8	96
	df = 9, X^2 = 16.6, C = .417				
* 41	a	547	60	6	75
	b	106	11	0	12
	c	89	20	2	18
	df = 6, X^2 = 36.9, C = .499				
* 43	a	215	145	54	274
	b	42	25	15	47
	c	23	33	25	48
	df = 9, X^2 = 28.2, C = .464				
* 45	a	207	120	111	250
	b	35	29	24	41
	c	22	41	19	47
	df = 9, X^2 = 20.5, C = .407				
* 47	a	3	8	9	668
	b	1	2	2	124
	c	2	2	4	121
	df = 9, X^2 = 104.1, C = .574				
* 49	a	282	124	36	246
	b	59	25	6	87
	c	40	32	10	47
	df = 9, X^2 = 93.0, C = .676				
* 51	a	270	148	42	228
	b	43	29	7	50
	c	33	26	19	51
	df = 9, X^2 = 24.0, C = .431				
* 53	a	628	39	5	16
	b	119	7	2	1
	c	116	9	1	3
	df = 9, X^2 = 69.0, C = .097				
* 55	a	572	26	0	90
	b	111	4	0	14
	c	110	8	0	11
	df = 4, X^2 = 54.2, C = .573				

FUNCTION		VALUE 1	2	3	4
* 38	a	316	123	31	218
	b	61	22	8	38
	c	45	44	7	33
	df = 9, X^2 = 24.9, C = .433				
40	a	455	90	19	124
	b	86	19	5	19
	c	60	35	11	23
	df = 9, X^2 = 12.7, C = .365				
* 42	a	395	130	23	140
	b	78	25	4	22
	c	56	41	6	26
	df = 9, X^2 = 36.3, C = .515				
44	a	416	63	15	194
	b	78	14	6	31
	c	78	22	7	22
	df = 9, X^2 = 18.2, C = .412				
* 46	a	61	74	102	451
	b	14	14	21	80
	c	8	14	27	80
	df = 9, X^2 = 7.6, C = .309				
* 48	a	493	83	14	98
	b	90	16	4	19
	c	84	21	3	21
	df = 9, X^2 = 17.6, C = .389				
* 50	a	193	29	12	454
	b	34	6	2	87
	c	22	7	3	97
	df = 9, X^2 = 29.5, C = .438				
* 52	a	217	97	52	322
	b	44	18	8	59
	c	38	33	20	38
	df = 9, X^2 = 17.1, C = .375				
* 54	a	130	77	30	451
	b	25	18	6	80
	c	14	18	20	77
	df = 9, X^2 = 17.3, C = .395				
* 56	a	575	65	3	45
	b	111	11	0	7
	c	107	16	0	6
	df = 4, X^2 = 36.3, C = .529				

Table C.2: COMBINED (Illinois and Iowa) RESPONSIBILITY SORT
(Continued)

FUNCTION		VALUE 1	2	3	4
57	a	493	86	5	104
	b	94	14	1	20
	c	76	37	0	16
	df = 6, X^2 = 9.9, C = .311				
* 59	a	278	115	33	262
	b	59	26	5	39
	c	40	36	9	44
	df = 9, X^2 = 19.0, C = .401				
* 61	a	205	175	57	251
	b	36	32	14	47
	c	22	37	23	47
	df = 9, X^2 = 22.1, C = .420				
* 63	a	23	4	3	658
	b	5	2	1	121
	c	9	1	0	119
	df = 6, X^2 = 56.0, C = .481				
65	a	147	166	80	295
	b	26	29	15	59
	d	9	32	27	61
	df = 9, X^2 = 15.1, C = .370				
67	a	200	72	33	383
	b	40	13	8	68
	c	35	29	7	58
	df = 9, X^2 = 5.5, C = .253				
69	a	165	43	8	472
	b	29	5	3	92
	c	15	11	0	103
	df = 6, X^2 = 11.8, C = .355				
* 71	a	367	101	12	208
	b	81	14	3	31
	c	57	42	1	29
	df = 9, X^2 = 62.6, C = .559				
* 73	a	192	96	41	359
	b	38	19	13	59
	c	30	28	5	66
	df = 9, X^2 = 55.3, C = .583				
* 75	a	115	110	82	381
	b	21	18	16	74
	c	13	17	21	78
	df = 9, X^2 = 20.7, C = .416				

FUNCTION		VALUE 1	2	3	4
58	a	206	15	3	464
	b	52	1	0	76
	c	37	8	0	84
	df = 4, X^2 = 6.1, C = .215				
60	a	71	91	40	486
	b	12	21	10	86
	c	6	13	23	87
	df = 9, X^2 = 10.9, C = .351				
* 62	a	316	111	27	234
	b	63	26	6	34
	c	40	38	10	41
	df = 9, X^2 = 31.5, C = .482				
* 64	a	18	19	7	644
	b	8	2	1	118
	c	0	1	5	123
	df = 6, X^2 = 59.1, C = .615				
66	a	546	76	5	61
	b	105	13	2	9
	c	101	21	2	5
	df = 9, X^2 = 16.1, C = .347				
* 68	a	581	23	0	84
	b	111	5	0	13
	c	111	4	0	14
	df = 4, X^2 = 32.8, C = .481				
70	a	328	56	6	298
	b	65	11	1	52
	c	69	15	0	45
	df = 6, X^2 = 4.1, C = .282				
* 72	a	162	143	79	304
	b	29	25	17	58
	c	20	31	15	63
	df = 9, X^2 = 28.6, C = .468				
* 74	a	508	79	4	97
	b	98	13	1	17
	c	81	31	4	13
	df = 9, X^2 = 20.7, C = .404				
76	a	93	101	81	413
	b	17	18	15	79
	c	11	16	33	69
	df = 9, X^2 = 12.5, C = .359				

Table C.2: COMBINED (Illinois and Iowa) RESPONSIBILITY SORT
(Continued)

FUNC-TION		VALUE 1	2	3	4
* 77	a	516	94	4	74
	b	103	15	2	9
	c	88	30	1	10
	df = 9, X^2 = 59.7, C = .532				
* 79	a	172	109	45	362
	b	31	23	11	64
	c	15	18	17	79
	df = 9, X^2 = 55.7, C = .583				
* 81	a	241	117	28	302
	b	44	24	7	54
	c	35	28	7	59
	df = 9, X = 66.5, C = .607				
83	a	179	122	52	335
	b	37	19	13	60
	c	14	28	16	71
	df = 9, X^2 = 12.8, C = .351				
* 85	a	252	116	39	281
	b	53	23	11	42
	c	31	32	11	55
	df = 9, X^2 = 23.6, C = .426				
* 87	a	569	70	4	45
	b	111	10	0	8
	c	92	27	0	10
	df = 4, X^2 = 29.9, C = .485				
* 89	a	448	20	2	218
	b	87	5	0	37
	c	72	5	0	52
	df = 4, X^2 = 20.0, C = .391				
91	a	63	52	35	538
	b	12	7	10	100
	c	8	8	13	100
	df = 9, X^2 = 11.9, C = .387				
* 93	a	161	107	51	369
	b	30	19	12	68
	c	17	23	10	79
	df = 9, X^2 = 39.7, C = .523				
* 95	a	168	5	2	513
	b	39	1	0	89
	c	31	1	1	96
	df = 6, X^2 = 66.7, C = .234				

FUNC-TION		VALUE 1	2	3	4
* 78	a	20	9	16	643
	b	5	2	2	120
	c	4	4	5	116
	df = 9, X^2 = 19.1, C = .329				
* 80	a	61	49	64	514
	b	13	8	13	95
	c	3	11	19	96
	df = 9, X^2 = 21.1, C = .449				
82	a	116	57	16	499
	b	22	11	4	92
	c	13	5	3	108
	df = 9, X = 14.8, C = .371				
84	a	79	63	34	512
	b	18	11	6	94
	c	7	20	13	89
	df = 9, X^2 = 3.4, C = .241				
86	a	239	112	26	301
	b	46	27	2	54
	c	31	40	11	47
	df = 9, X^2 = 10.2, C = .311				
88	a	94	73	39	482
	b	19	13	11	86
	c	5	11	25	88
	df = 9, X^2 = .57, C = .129				
* 90	a	540	53	1	94
	b	102	13	0	14
	c	98	18	0	13
	df = 4, X^2 = 44.3, C = .535				
92	a	104	106	63	415
	b	14	20	16	79
	c	11	21	23	74
	df = 9, X^2 = 4.3, C = .245				
* 94	a	310	129	29	220
	b	62	23	8	36
	c	36	37	15	41
	df = 9, X^2 = 39.9, C = .516				
96	a	215	103	29	341
	b	41	20	10	58
	c	19	36	17	57
	df = 9, X^2 = 6.3, C = .277				

Table C.2: COMBINED (Illinois and Iowa) RESPONSIBILITY SORT
(Continued)

FUNCTION		VALUE 1	2	3	4
97	a	184	110	62	332
	b	34	23	17	55
	c	17	24	18	70
	df = 9, X^2 = 4.2, C = .239				
* 99	a	198	179	64	247
	b	40	38	15	36
	c	13	30	35	51
	df = 9, X^2 = 21.8, C = .425				

FUNCTION		VALUE 1	2	3	4
98	a	579	73	2	34
	b	112	12	0	5
	c	97	25	1	6
	df = 9, X^2 = 17.2, C = .361				

TABLE C.3: ILLINOIS INTERVIEW RESPONSIBILITY SORT AND FUNCTION

FUNCTION	VALUE	LPN				RN				AIDE			
		1	2	3	4	1	2	3	4	1	2	3	4
1	N	3	2	2	522	0	0	1	101	1	0	1	94
	%	1	0	0	99	0	0	1	99	1	0	1	98
2	N	437	62	2	28	85	14	0	3	81	10	2	3
	%	83	12	0	5	83	14	0	3	84	11	2	3
3	N	47	26	20	436	3	4	3	92	11	6	2	77
	%	9	5	4	82	3	4	3	90	12	6	2	80
4	N	362	47	1	119	69	13	0	20	63	13	1	19
	%	69	9	0	22	68	13	0	19	66	13	1	20
5	N	307	127	29	66	54	31	4	13	57	22	9	8
	%	58	24	5	13	53	30	4	13	60	23	9	8
6	N	87	39	20	383	4	2	3	93	10	9	9	68
	%	16	7	4	73	4	2	3	91	11	9	9	71
7	N	50	42	22	415	7	13	11	71	12	8	9	67
	%	9	8	4	79	7	13	11	69	13	8	9	70
8	N	362	64	7	96	54	26	3	19	70	12	3	11
	%	69	12	1	18	53	25	3	19	73	13	3	11
9	N	311	56	6	156	61	13	1	27	64	7	3	22
	%	59	11	1	29	60	13	1	26	67	7	3	23
10	N	38	30	28	433	2	5	3	92	9	4	2	81
	%	7	6	5	82	2	5	3	90	9	4	2	85
11	N	12	6	9	502	1	0	1	100	5	2	4	85
	%	2	1	2	95	1	0	1	98	5	2	4	89
12	N	106	66	24	333	16	9	7	70	15	9	6	66
	%	20	12	5	63	16	9	7	68	16	9	6	69
13	N	315	62	6	146	58	16	1	27	67	5	5	19
	%	60	12	1	27	57	16	1	26	70	5	5	20
14	N	24	14	18	473	0	1	5	96	10	5	9	72
	%	5	3	3	89	0	1	5	94	11	5	9	75
15	N	17	16	11	485	1	2	5	94	7	9	4	76
	%	3	3	2	92	1	2	5	92	7	10	4	79

TABLE C.3: ILLINOIS INTERVIEW RESPONSIBILITY SORT AND FUNCTION
(Continued)

FUNCTION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
16	N	268	68	13	180	47	12	4	39	51	9	5	31
	%	51	13	2	34	46	12	4	38	53	10	5	32
17	N	272	124	23	110	37	35	4	26	54	22	4	16
	%	52	23	4	21	36	34	4	26	56	23	4	17
18	N	84	41	16	388	6	2	4	90	9	5	3	79
	%	16	8	3	73	6	2	4	88	10	5	3	82
19	N	282	103	16	128	41	30	6	25	49	18	4	25
	%	53	20	3	24	40	29	6	25	51	19	4	26
20	N	242	14	0	273	54	2	0	46	48	5	0	43
	%	46	3	0	51	53	2	0	45	50	5	0	45
21	N	306	80	20	123	52	23	5	22	54	13	9	20
	%	58	15	4	23	51	23	5	21	56	14	9	21
22	N	8	5	10	506	0	1	1	100	5	4	4	83
	%	1	1	2	96	0	1	1	98	5	4	4	87
23	N	55	32	20	422	4	6	1	91	12	5	3	76
	%	10	6	4	80	4	6	1	89	13	5	3	79
24	N	6	3	2	518	0	0	0	102	2	0	1	93
	%	1	1	0	98	0	0	0	100	2	0	1	97
25	N	301	101	12	115	50	29	4	19	56	16	5	19
	%	57	19	2	22	49	28	4	19	58	17	5	20
26	N	270	60	9	190	65	7	1	29	54	6	4	32
	%	51	11	2	36	64	7	1	28	56	6	4	34
27	N	298	70	4	157	48	20	3	31	58	13	2	23
	%	56	13	1	30	47	20	3	30	60	14	2	24
28	N	26	37	46	420	2	4	4	92	8	9	8	71
	%	5	7	9	79	2	4	4	90	8	10	8	74
29	N	420	30	0	79	82	7	0	13	89	3	0	4
	%	79	6	0	15	80	7	0	13	93	3	0	4
30	N	7	2	2	518	0	1	0	101	3	2	4	87
	%	1	0	0	99	0	1	0	99	3	2	4	91

TABLE C.3: ILLINOIS INTERVIEW RESPONSIBILITY SORT AND FUNCTION
(Continued)

FUNCTION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
31	N	415	28	3	83	83	6	1	12	77	7	2	10
	%	78	5	1	16	81	6	1	12	80	7	2	11
32	N	196	87	26	220	30	22	5	45	32	20	6	38
	%	37	16	5	42	29	22	5	44	33	21	6	40
33	N	368	75	16	70	50	32	4	16	72	12	5	7
	%	70	14	3	13	49	31	4	16	75	13	5	7
34	N	432	55	7	35	60	22	4	16	76	14	3	3
	%	82	10	1	7	59	21	4	16	79	15	3	3
35	N	256	108	29	136	34	36	5	27	51	12	8	25
	%	48	20	6	26	33	35	5	27	53	13	8	26
36	N	55	57	44	373	10	12	19	61	10	9	12	65
	%	10	11	8	71	10	12	18	60	10	9	13	68
37	N	34	29	17	449	0	6	7	89	5	6	6	79
	%	6	6	3	85	0	6	7	87	5	6	6	83
38	N	232	91	26	180	34	32	6	30	32	20	4	40
	%	44	17	5	34	33	31	6	30	33	21	4	42
39	N	104	69	43	313	11	8	5	78	10	15	4	67
	%	20	13	8	59	11	8	5	76	10	16	4	70
40	N	343	73	16	97	42	28	10	22	60	13	4	19
	%	65	14	3	18	41	27	10	22	62	14	4	20
41	N	414	53	5	57	66	17	1	18	72	7	2	15
	%	78	10	1	11	65	17	1	17	75	7	2	16
42	N	294	101	17	117	43	31	4	24	50	18	5	23
	%	56	19	3	22	42	30	4	24	52	19	5	24
43	N	161	114	41	213	19	22	18	43	39	20	9	28
	%	30	22	8	40	19	21	18	42	41	21	9	29
44	N	317	48	12	152	60	16	5	21	47	8	10	31
	%	60	9	2	29	59	16	5	20	49	8	11	32
45	N	155	91	87	196	17	29	15	41	29	15	13	39
	%	29	17	17	37	17	28	15	40	30	16	13	41

TABLE C.3: ILLINOIS INTERVIEW RESPONSIBILITY SORT AND FUNCTION
(Continued)

FUNCTION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
46	N	47	52	71	359	6	12	19	65	13	15	8	60
	%	9	10	13	68	6	12	18	64	14	16	8	62
47	N	2	4	6	517	0	1	2	99	1	1	1	93
	%	0	1	1	98	0	1	2	97	1	1	1	97
48	N	373	61	14	81	63	17	2	20	69	11	2	14
	%	71	11	3	15	62	17	2	19	72	11	2	15
49	N	201	94	29	205	30	25	7	40	41	13	7	35
	%	38	18	5	39	29	25	7	39	43	14	7	36
50	N	133	24	9	363	13	6	1	82	21	7	2	66
	%	25	4	2	69	13	6	1	80	22	7	2	69
51	N	196	115	32	186	25	17	15	45	26	11	11	48
	%	37	22	6	35	24	17	15	44	27	11	12	50
52	N	162	72	43	252	29	24	13	36	34	13	12	37
	%	31	13	8	48	28	24	13	35	35	14	12	39
53	N	482	32	3	10	91	8	0	3	91	4	0	1
	%	91	6	1	2	89	8	0	3	95	4	0	1
54	N	82	48	19	380	10	11	16	65	14	11	9	62
	%	15	9	4	72	10	11	15	64	15	11	9	65
55	N	435	22	0	72	86	6	0	10	87	4	2	3
	%	82	4	0	14	84	6	0	10	91	4	2	3
56	N	435	53	2	39	83	13	0	6	88	6	1	1
	%	83	10	0	7	81	13	0	6	92	6	1	1
57	N	379	68	4	78	57	30	0	15	73	13	4	6
	%	71	13	1	15	56	29	0	15	76	14	4	6
58	N	147	14	3	365	26	4	0	72	26	5	0	65
	%	28	2	1	69	25	4	0	71	27	5	0	68
59	N	208	96	24	201	33	25	7	37	51	12	6	27
	%	39	18	5	38	32	25	7	36	53	13	6	28
60	N	41	60	33	395	3	7	15	77	10	7	6	73
	%	8	11	6	75	3	7	15	75	11	7	6	76

TABLE C.3: ILLINOIS INTERVIEW RESPONSIBILITY SORT AND FUNCTION
(Continued)

FUNC-TION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
61	N	164	120	46	199	17	29	14	42	25	18	11	42
	%	31	23	9	37	17	28	14	41	26	19	11	44
62	N	231	84	21	193	28	28	9	37	41	13	10	32
	%	44	16	4	36	28	27	9	36	43	14	10	33
63	N	15	4	3	507	5	1	0	96	2	2	1	91
	%	3	1	0	96	5	1	0	94	2	2	1	95
64	N	12	9	3	505	0	0	3	99	3	1	2	90
	%	2	2	1	95	0	0	3	97	3	1	2	94
65	N	119	121	61	228	7	24	21	50	19	21	12	44
	%	22	23	12	43	7	23	21	49	20	22	12	46
66	N	418	59	4	48	81	15	1	5	87	6	1	2
	%	79	11	1	9	79	15	1	5	91	6	1	2
67	N	150	52	23	304	25	19	6	52	30	15	2	49
	%	28	10	4	58	24	19	6	51	31	16	2	51
68	N	444	19	0	66	87	2	0	13	87	3	1	5
	%	84	4	0	12	85	2	0	13	91	3	1	5
69	N	112	34	7	376	6	8	0	88	22	7	2	65
	%	21	7	1	71	6	8	0	86	23	7	2	68
70	N	242	47	5	235	51	11	0	40	54	9	2	31
	%	46	9	1	44	50	11	0	39	56	10	2	32
71	N	267	79	12	171	45	29	1	27	57	16	5	18
	%	51	15	2	32	44	28	1	27	59	17	5	19
72	N	103	97	63	266	13	21	13	55	19	13	9	55
	%	20	18	12	50	13	20	13	54	20	14	9	57
73	N	124	69	30	306	21	19	2	60	16	11	6	63
	%	23	13	6	58	20	19	2	59	17	11	6	66
74	N	384	62	4	79	64	23	2	13	75	9	3	9
	%	72	12	1	15	63	22	2	13	78	9	3	10
75	N	84	78	59	308	8	14	13	67	13	11	8	64
	%	16	15	11	58	8	14	13	65	14	11	8	67

TABLE C.3: ILLINOIS INTERVIEW RESPONSIBILITY SORT AND FUNCTION
(Continued)

FUNC-TION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
76	N	67	65	53	344	8	10	23	61	19	14	8	55
	%	13	12	10	65	8	10	22	60	20	15	8	57
77	N	389	77	3	60	68	24	0	10	78	14	2	2
	%	73	15	1	11	67	23	0	10	81	15	2	2
78	N	15	5	11	498	1	4	1	96	3	1	4	88
	%	3	1	2	94	1	4	1	94	3	1	4	92
79	N	118	80	30	301	12	11	11	68	27	15	8	46
	%	22	15	6	57	12	11	11	66	28	16	8	48
80	N	39	29	44	417	2	8	12	80	11	6	10	69
	%	7	6	8	79	2	8	12	78	12	6	10	72
81	N	164	87	23	255	27	19	3	53	22	10	4	60
	%	31	17	4	48	26	19	3	52	23	10	4	63
82	N	80	43	12	394	8	3	1	90	12	5	3	76
	%	15	8	2	75	8	3	1	88	13	5	3	79
83	N	118	82	42	287	10	18	10	64	25	12	6	53
	%	22	16	8	54	10	17	10	63	26	13	6	55
84	N	50	37	30	412	5	14	6	77	9	9	2	76
	%	9	7	6	78	5	14	6	75	10	9	2	79
85	N	175	83	32	239	19	25	8	50	31	16	5	44
	%	33	16	6	45	19	24	8	49	32	17	5	46
86	N	170	86	22	251	22	28	9	43	35	16	5	40
	%	32	16	4	48	22	27	9	42	36	17	5	42
87	N	432	57	4	36	72	20	0	10	79	7	3	7
	%	81	11	1	7	70	20	0	10	83	7	3	7
88	N	68	48	27	386	3	11	17	71	7	9	5	75
	%	13	9	5	73	3	11	17	69	7	10	5	78
89	N	341	15	1	172	55	3	0	44	57	5	2	32
	%	64	3	0	33	54	3	0	43	60	5	2	33
90	N	413	45	1	70	76	13	0	13	83	5	2	6
	%	78	9	0	13	74	13	0	13	87	5	2	6

TABLE C.3: ILLINOIS INTERVIEW RESPONSIBILITY SORT AND FUNCTION
(Continued)

FUNC-TION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
91	N	37	31	17	444	2	5	8	87	3	4	6	83
	%	7	6	3	84	2	5	8	85	3	4	6	87
92	N	69	72	45	343	9	15	18	60	12	13	12	59
	%	13	14	8	65	9	15	17	59	12	14	13	61
93	N	104	72	41	312	12	14	7	69	26	12	5	53
	%	20	13	8	59	12	14	7	67	27	13	5	55
94	N	223	87	24	195	28	29	9	36	37	19	5	35
	%	42	16	5	37	28	28	9	35	39	20	5	36
95	N	127	5	2	395	22	0	1	79	19	3	0	74
	%	24	1	0	75	22	0	1	77	20	3	0	77
96	N	155	78	24	272	12	27	13	50	33	14	6	43
	%	29	15	5	51	12	26	13	49	34	15	6	45
97	N	137	78	48	266	15	16	13	58	24	11	6	55
	%	26	15	9	50	15	15	13	57	25	12	6	57
98	N	447	56	2	24	76	20	0	6	87	4	3	2
	%	84	11	0	5	74	20	0	6	91	4	3	2
99	N	159	131	56	183	11	24	25	42	33	23	10	30
	%	30	25	10	35	11	24	24	41	34	24	11	31

TABLE C.4: IOWA INTERVIEW RESPONSIBILITY SORT AND FUNCTION

FUNCTION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
1	N	1	1	0	157	1	0	0	27	0	0	1	26
	%	1	1	0	98	4	0	0	96	0	0	4	96
2	N	135	13	1	10	25	2	1	0	25	1	0	1
	%	85	8	1	6	89	7	4	0	92	4	0	4
3	N	19	12	13	115	4	2	2	20	6	0	3	18
	%	12	8	8	72	14	7	7	72	22	0	11	67
4	N	100	10	0	49	21	4	2	1	21	0	1	5
	%	63	6	0	31	75	14	7	4	78	0	4	18
5	N	88	37	3	31	15	9	3	1	18	5	4	0
	%	55	23	2	20	54	32	11	3	67	18	15	0
6	N	29	16	9	105	3	2	2	21	9	5	1	12
	%	18	10	6	66	11	7	7	75	33	19	4	44
7	N	38	18	10	93	3	7	3	15	5	3	5	14
	%	24	11	6	59	11	25	11	53	19	11	18	52
8	N	101	31	1	26	15	10	2	1	22	2	0	3
	%	64	19	1	16	54	36	7	3	82	7	0	11
9	N	92	15	0	52	19	5	1	3	15	3	1	8
	%	58	9	0	33	68	18	3	11	55	11	4	30
10	N	9	12	14	124	1	3	3	21	3	5	2	17
	%	6	7	9	78	3	11	11	75	11	19	7	63
11	N	1	1	0	157	1	0	0	27	0	0	2	25
	%	1	1	0	98	4	0	0	96	0	0	7	93
12	N	60	30	5	64	9	5	3	11	8	4	1	14
	%	38	19	3	40	32	18	11	39	29	15	4	52
13	N	113	15	3	28	16	8	0	4	19	2	1	5
	%	71	9	2	18	57	29	0	14	70	7	4	19
14	N	7	9	11	132	1	2	5	20	5	3	5	14
	%	4	6	7	83	4	7	18	71	18	11	19	52
15	N	12	15	9	123	0	2	3	23	1	5	6	15
	%	8	9	6	77	0	7	11	82	4	18	22	56

TABLE C.4: IOWA INTERVIEW RESPONSIBILITY SORT AND FUNCTION
(Continued)

FUNCTION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
16	N	93	21	4	41	14	10	2	2	16	1	2	8
	%	58	13	3	26	50	36	7	7	59	4	7	30
17	N	98	22	3	36	13	10	2	3	11	9	2	5
	%	62	14	2	22	46	36	7	11	41	33	7	19
18	N	39	15	7	98	1	6	2	19	2	5	2	18
	%	25	9	4	62	4	21	7	68	7	19	7	67
19	N	97	29	1	32	11	7	5	5	20	2	1	4
	%	61	18	1	20	39	25	18	18	74	7	4	15
20	N	94	0	0	65	19	1	0	8	16	1	0	10
	%	59	0	0	41	68	3	0	29	59	4	0	37
21	N	103	22	9	25	12	11	5	0	20	2	0	5
	%	65	14	5	16	43	39	18	0	74	7	0	19
22	N	2	0	1	156	0	0	0	28	7	1	0	19
	%	1	0	1	98	0	0	0	100	26	4	0	70
23	N	20	6	7	126	3	2	4	19	6	4	0	17
	%	13	4	4	79	11	7	14	68	22	15	0	63
24	N	3	1	0	155	0	0	0	28	0	0	3	24
	%	2	1	0	97	0	0	0	100	0	0	11	89
25	N	81	32	2	44	11	10	5	2	15	3	1	8
	%	51	20	1	28	39	36	18	7	55	11	4	30
26	N	112	9	3	35	24	2	0	2	23	1	1	2
	%	70	6	2	22	86	7	0	7	85	4	4	7
27	N	80	22	2	55	15	9	1	3	19	2	0	6
	%	50	14	1	35	54	32	3	11	71	7	0	22
28	N	12	23	11	113	2	3	1	22	7	2	8	10
	%	8	14	7	71	7	11	4	78	26	7	30	37
29	N	135	4	0	20	24	2	0	2	25	0	0	2
	%	85	2	0	13	85	8	0	7	93	0	0	7
30	N	9	6	4	140	0	0	0	28	0	2	3	22
	%	6	4	2	88	0	0	0	100	0	7	11	82

TABLE C.4: IOWA INTERVIEW RESPONSIBILITY SORT AND FUNCTION
(Continued)

FUNCTION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
31	N	131	8	0	20	23	5	0	0	24	0	0	3
	%	82	5	0	13	82	18	0	0	89	0	0	11
32	N	104	20	2	33	16	6	2	4	14	5	0	8
	%	65	13	1	21	57	22	7	14	52	18	0	30
33	N	102	28	2	27	12	14	1	1	21	2	1	3
	%	64	18	1	17	43	50	3	4	78	7	4	11
34	N	130	15	0	14	16	6	2	4	21	3	2	1
	%	82	9	0	9	57	22	7	14	78	11	7	4
35	N	87	36	1	35	9	12	3	4	18	5	1	3
	%	55	23	0	22	32	43	11	14	67	18	4	11
36	N	20	29	25	85	1	7	6	14	4	5	5	13
	%	13	18	16	53	4	25	21	50	15	18	19	48
37	N	10	11	2	136	1	2	3	22	2	2	4	19
	%	6	7	1	86	3	7	11	79	7	7	15	71
38	N	84	32	5	38	12	12	1	3	12	6	5	4
	%	53	20	3	24	43	43	3	11	44	22	19	15
39	N	35	34	15	75	3	3	3	19	2	3	2	20
	%	22	21	10	47	11	11	11	67	7	11	7	75
40	N	112	17	3	27	18	7	1	2	24	2	1	0
	%	70	11	2	17	64	25	4	7	89	7	4	0
41	N	133	7	1	18	24	3	1	0	23	1	0	3
	%	84	4	1	11	86	11	3	0	85	4	0	11
42	N	101	29	6	23	14	10	2	2	17	6	2	2
	%	64	18	4	14	50	36	7	7	63	22	7	8
43	N	54	31	13	61	4	11	7	6	11	6	6	4
	%	34	20	8	38	14	39	25	22	41	22	22	15
44	N	99	15	3	42	19	6	2	1	15	5	0	7
	%	62	10	2	26	68	21	7	4	56	18	0	26
45	N	52	29	24	54	5	12	4	7	5	6	5	11
	%	33	18	15	34	18	43	14	25	19	22	18	41

TABLE C.4: IOWA INTERVIEW RESPONSIBILITY SORT AND FUNCTION
(Continued)

FUNC-TION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
46	N	14	22	31	92	2	2	8	16	4	5	5	13
	%	9	14	19	58	7	7	29	57	15	18	19	48
47	N	1	4	3	151	2	1	2	23	0	2	4	21
	%	1	2	2	95	7	4	7	82	0	7	15	78
48	N	120	22	0	17	22	4	1	1	18	3	1	5
	%	75	14	0	11	78	14	4	4	67	11	4	18
49	N	81	30	7	41	10	8	3	7	15	3	3	6
	%	51	19	4	26	36	28	11	25	56	11	11	22
50	N	60	5	3	91	9	1	2	16	9	1	1	16
	%	38	3	2	57	32	4	7	57	33	4	4	59
51	N	74	33	10	42	8	9	4	7	12	2	1	12
	%	47	21	6	26	29	32	14	25	45	7	4	44
52	N	55	25	9	70	10	9	7	2	14	4	0	9
	%	34	16	6	44	36	32	25	7	52	15	0	33
53	N	144	7	2	6	26	1	1	0	24	0	1	2
	%	91	4	1	4	93	4	3	0	89	0	4	7
54	N	48	29	11	71	4	7	4	13	7	5	4	11
	%	30	18	7	45	14	25	14	47	26	18	15	41
55	N	137	4	0	18	25	2	0	1	23	0	0	4
	%	86	3	0	11	89	7	0	4	85	0	0	15
56	N	140	12	1	6	25	3	0	0	23	1	0	3
	%	88	7	1	4	89	11	0	0	85	4	0	11
57	N	114	18	1	26	20	7	0	1	23	2	0	2
	%	72	11	1	16	71	25	0	4	85	8	0	7
58	N	59	1	0	99	11	4	0	13	14	1	2	10
	%	37	1	0	62	39	14	0	47	52	4	7	37
59	N	70	19	9	61	8	11	2	7	11	2	2	12
	%	44	12	6	38	29	39	7	25	41	7	7	45
60	N	30	31	7	91	3	6	8	11	5	3	2	17
	%	19	20	4	57	11	21	29	39	19	11	7	63

TABLE C.4: IOWA INTERVIEW RESPONSIBILITY SORT AND FUNCTION
(Continued)

FUNC-TION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
61	N	41	55	11	52	5	8	9	6	5	6	3	13
	%	26	34	7	33	18	29	32	21	19	22	11	48
62	N	85	27	6	41	13	10	1	4	18	4	1	4
	%	53	17	4	26	46	36	4	14	66	15	4	15
63	N	8	0	0	151	4	0	0	24	3	1	1	22
	%	5	0	0	95	14	0	0	86	11	4	4	81
64	N	6	10	4	139	0	1	2	25	1	4	2	20
	%	4	6	3	87	0	4	7	89	4	15	7	74
65	N	28	45	19	67	2	8	6	12	6	9	2	10
	%	18	28	12	42	7	29	21	43	22	33	8	37
66	N	128	17	1	13	21	6	1	0	21	2	0	4
	%	80	11	1	8	75	21	4	0	78	7	0	15
67	N	50	20	10	79	10	10	1	7	11	3	1	12
	%	31	13	6	50	36	36	3	25	41	11	4	44
68	N	137	4	0	18	25	2	0	1	23	0	0	4
	%	86	3	0	11	89	7	0	4	85	0	0	15
69	N	53	9	1	96	10	3	0	15	9	2	0	16
	%	33	6	1	60	36	11	0	53	33	8	0	59
70	N	86	9	1	63	18	4	0	6	14	0	1	12
	%	54	6	1	39	64	14	0	22	52	0	4	44
71	N	100	22	0	37	13	13	0	2	17	2	0	8
	%	63	14	0	23	46	47	0	7	63	7	0	30
72	N	59	46	16	38	7	10	2	9	14	5	4	4
	%	37	29	10	24	25	36	7	32	52	18	15	15
73	N	68	27	11	53	9	9	3	7	6	5	3	13
	%	43	17	7	33	32	32	11	25	22	19	11	48
74	N	124	17	0	18	18	8	2	0	20	5	1	1
	%	78	11	0	11	64	29	7	0	74	18	4	4
75	N	31	32	23	73	5	3	8	12	2	7	2	16
	%	20	20	14	46	18	11	28	43	7	26	7	60

TABLE C.4: IOWA INTERVIEW RESPONSIBILITY SORT AND FUNCTION (Continued)

FUNCTION	VALUE	LPN 1	LPN 2	LPN 3	LPN 4	RN 1	RN 2	RN 3	RN 4	AIDE 1	AIDE 2	AIDE 3	AIDE 4
76	N	26	36	28	69	3	6	11	8	6	3	3	15
	%	16	23	18	43	11	21	39	29	22	11	11	56
77	N	127	17	1	14	21	6	1	0	25	1	0	1
	%	80	11	0	9	75	21	4	0	92	4	0	4
78	N	5	4	5	145	3	0	4	21	1	2	2	22
	%	3	3	3	91	11	0	14	75	4	7	7	82
79	N	54	29	15	61	3	7	6	12	11	4	3	9
	%	34	18	10	38	11	25	21	43	41	15	11	33
80	N	22	20	20	97	1	3	7	17	3	6	6	12
	%	14	13	12	61	3	11	25	61	11	22	22	45
81	N	77	30	5	47	8	10	4	6	9	2	3	13
	%	48	19	3	30	29	36	14	21	34	7	11	48
82	N	36	14	4	105	5	2	2	19	6	2	0	19
	%	23	9	2	66	18	7	7	68	22	7	0	71
83	N	61	40	10	48	4	10	6	8	9	3	8	7
	%	39	25	6	30	14	36	21	29	33	11	30	26
84	N	29	26	4	100	2	6	7	13	7	2	3	15
	%	18	16	3	63	7	21	25	47	26	7	11	56
85	N	77	33	7	42	12	7	3	6	16	3	2	6
	%	49	21	4	26	43	25	11	21	59	11	8	22
86	N	69	36	4	50	9	12	2	5	17	4	0	6
	%	43	23	3	31	32	43	7	18	63	15	0	22
87	N	137	13	0	9	20	7	0	1	21	3	0	3
	%	86	8	0	6	71	25	0	4	78	11	0	11
88	N	26	25	12	96	2	0	8	18	6	3	5	13
	%	16	16	8	60	7	0	29	64	22	11	19	48
89	N	107	5	1	46	18	2	0	8	13	1	1	12
	%	67	3	1	29	64	7	0	29	48	4	4	44
90	N	127	8	0	24	23	5	0	0	24	1	0	2
	%	80	5	0	15	82	18	0	0	89	4	0	7

TABLE C.4: IOWA INTERVIEW RESPONSIBILITY SORT AND FUNCTION
(Continued)

FUNC-TION	VALUE	LPN				RN				AIDE			
		1	2	3	4	1	2	3	4	1	2	3	4
91	N	26	21	18	94	6	3	5	14	3	3	3	18
	%	17	13	11	59	21	11	18	50	11	11	11	67
92	N	35	34	18	72	2	6	5	15	5	4	4	14
	%	22	22	11	45	7	21	18	54	18	15	15	52
93	N	57	35	10	57	5	9	3	11	12	3	0	12
	%	36	22	6	36	18	32	11	39	44	11	0	45
94	N	87	42	5	25	8	9	6	5	14	1	5	7
	%	55	26	3	16	29	32	21	18	52	4	18	26
95	N	41	0	0	118	9	1	0	18	6	2	1	18
	%	26	0	0	74	32	4	0	64	22	7	4	67
96	N	60	25	5	69	7	9	4	8	9	9	5	4
	%	38	16	3	43	25	32	14	29	33	33	19	15
97	N	47	32	14	66	2	8	5	13	10	5	3	9
	%	30	20	9	41	7	29	18	46	37	19	11	33
98	N	132	17	0	10	21	5	1	1	24	2	0	1
	%	83	11	0	6	75	18	3	4	89	7	0	4
99	N	39	48	8	64	2	6	10	10	11	6	2	8
	%	25	30	5	40	7	21	36	36	41	22	7	30

TABLE C.5: RESPONSIBILITY FOR PERFORMANCE OF FUNCTIONS BY 546 LPN's EMPLOYED IN GENERAL HOSPITALS

FUNCTION	VALUE	Responsibility Level** 1	2	3	4	FUNCTION	VALUE	Responsibility Level 1	2	3	4
1	N	4	3	2	537	16	N	306	80	14	146
	%	1	1	-*	98		%	56	15	2	27
2	N	468	64	3	11	17	N	323	128	25	70
	%	86	11	1	2		%	59	23	5	13
3	N	60	37	30	419	18	N	115	52	21	358
	%	11	7	5	77		%	21	9	4	66
4	N	369	47	1	129	19	N	302	114	17	113
	%	67	9	-*	24		%	55	21	3	21
5	N	322	143	28	53	20	N	267	11	0	268
	%	59	26	5	10		%	49	2	0	49
6	N	106	53	28	359	21	N	345	87	23	91
	%	19	10	5	66		%	63	16	4	17
7	N	57	49	28	412	22	N	7	5	10	524
	%	10	9	5	76		%	1	1	2	96
8	N	369	81	8	88	23	N	69	36	23	418
	%	68	15	1	16		%	13	7	4	76
9	N	372	65	6	103	24	N	5	4	2	535
	%	68	12	1	19		%	1	1	-*	98
10	N	45	39	38	424	25	N	351	119	12	64
	%	8	7	7	78		%	64	22	2	12
11	N	12	7	9	518	26	N	308	62	12	164
	%	2	1	2	95		%	57	11	2	30
12	N	129	84	26	307	27	N	335	85	5	121
	%	24	15	5	56		%	61	16	1	22
13	N	345	64	8	129	28	N	25	53	49	419
	%	63	12	1	24		%	4	10	9	77
14	N	21	21	26	478	29	N	462	27	0	57
	%	4	4	5	87		%	85	5	0	10
15	N	16	20	16	494	30	N	5	4	2	535
	%	3	4	3	90		%	1	1	-*	98

*Less than one percent.

**1. Perform with independent responsibility
2. Perform under shared responsibility.
3. Perform under direct supervision.
4. Do not perform in this assignment.

TABLE C.5: RESPONSIBILITY FOR PERFORMANCE OF FUNCTIONS BY 546 LPN's EMPLOYED IN GENERAL HOSPITALS

FUNCTION	VALUE	Responsibility Levels 1	2	3	4	FUNCTION	VALUE	Responsibility Level 1	2	3	4
31	N	450	30	3	63	46	N	43	67	93	343
	%	82	5	1	12		%	8	12	17	63
32	N	243	88	23	192	47	N	3	6	8	529
	%	45	16	4	35		%	1	1	1	97
33	N	398	88	18	42	48	N	413	70	12	51
	%	73	16	3	8		%	76	13	2	9
34	N	457	59	5	25	49	N	202	107	33	204
	%	84	11	1	4		%	37	20	6	37
35	N	292	122	28	104	50	N	154	24	11	357
	%	54	22	5	19		%	28	5	2	65
36	N	54	72	58	362	51	N	217	138	38	153
	%	10	13	11	66		%	40	25	7	28
37	N	32	33	19	462	52	N	196	88	49	213
	%	6	6	3	85		%	36	16	9	39
38	N	277	108	26	135	53	N	506	28	5	7
	%	50	20	5	25		%	93	5	1	1
39	N	117	94	50	285	54	N	83	64	29	370
	%	21	17	9	52		%	15	12	5	68
40	N	387	76	16	67	55	N	477	21	0	48
	%	22	17	9	52		%	87	4	0	9
41	N	467	44	5	30	56	N	472	49	3	22
	%	86	8	1	5		%	86	9	1	4
42	N	342	111	17	76	57	N	409	69	5	63
	%	63	20	3	14		%	75	13	1	11
43	N	199	134	42	171	58	N	147	11	3	385
	%	36	25	8	31		%	27	2	1	70
44	N	362	55	12	117	59	N	248	98	28	172
	%	66	10	2	22		%	45	18	5	32
45	N	190	110	103	143	60	N	60	83	33	370
	%	35	20	19	26		%	11	15	6	68

TABLE C.5: RESPONSIBILITY FOR PERFORMANCE OF FUNCTIONS BY 546 LPN's EMPLOYED IN GENERAL HOSPITALS

FUNCTION	VALUE	Responsibility Levels 1	2	3	4	FUNCTION	VALUE	Responsibility Levels 1	2	3	4
91	N	41	39	29	437	96	N	174	94	25	253
	%	8	7	5	80		%	32	17	5	46
92	N	75	89	54	328	97	N	153	90	57	246
	%	14	16	10	60		%	28	17	10	45
93	N	103	92	44	307	98	N	466	60	2	18
	%	19	17	8	56		%	86	11	-*	3
94	N	236	110	26	174	99	N	180	161	61	144
	%	43	20	5	32		%	33	30	11	26
95	N	114	2	2	428						
	%	21	-*	-*	79						

*Less than one Percent.

**1. Perform with independent responsibility.
2. Perform under shared responsibility.
3. Perform under direct supervision.
4. Do not perform in this assignment.

TABLE C.6: DISTRIBUTION OF RESPONSES AMONG TEN CATEGORIES FOR 99 FUNCTIONS OF THE Q-SORT BY LPNs IN GENERAL HOSPITALS (N=546)

	Least Important									Most Important		
VALUE	0	1	2	3	4	5	6	7	8	9		
Sor:											Mean	Standard
Freq:	8	8	12	14	15	14	12	8	5	3	Value	Deviation
FUNCTIONS												
1	199	105	109	69	39	9	9	4	2	1	1.5	1.63
2	2	7	8	17	83	138	162	97	29	3	5.5	1.42
3	40	76	137	118	77	21	22	18	8	29	3.1	2.22
4	14	22	27	39	67	108	143	97	22	7	5.1	1.92
5	8	11	21	45	111	153	115	59	20	3	4.9	1.62
6	27	58	114	103	84	63	42	28	16	11	3.5	2.10
7	156	81	117	97	45	29	12	8	0	1	2.0	1.76
8	8	10	15	41	91	102	103	72	65	39	5.5	2.00
9	10	18	25	40	95	138	119	70	27	4	5.0	1.78
10	56	87	135	107	64	35	15	14	12	21	3.0	2.18
11	113	99	144	103	47	19	14	4	2	1	2.0	1.64
12	33	46	82	104	95	89	58	31	5	3	3.6	1.94
13	13	23	53	85	132	145	61	17	13	4	4.1	1.69
14	74	80	142	112	71	27	21	8	7	4	2.6	1.83
15	147	145	138	61	30	10	11	1	1	2	1.6	1.52
16	14	32	49	102	151	121	49	19	6	3	3.9	1.64
17	5	7	16	28	81	109	153	107	33	7	5.5	1.63
18	36	59	100	120	74	46	42	32	23	14	3.5	2.24
19	2	11	20	58	102	167	117	48	21	0	4.9	1.50
20	111	69	78	129	95	39	20	4	1	0	2.5	1.77
21	16	17	48	73	150	160	68	12	2	0	4.1	1.51
22	133	85	101	104	64	29	7	14	5	4	2.2	1.94
23	48	93	149	117	72	39	18	5	3	2	2.6	1.65
24	129	126	106	101	45	21	9	5	3	1	1.9	1.68
25	0	2	5	16	38	45	91	91	105	153	7.0	1.81
26	54	53	75	111	144	83	20	4	2	0	3.1	1.68
27	3	13	26	68	116	140	103	44	29	4	4.8	1.65
28	47	74	127	145	76	36	23	11	5	2	2.8	1.72
29	9	10	21	58	123	131	101	58	23	12	4.9	1.74
30	297	114	69	39	14	7	3	2	1	0	0.9	1.32
31	22	16	35	75	154	143	70	28	3	0	4.2	1.61

TABLE C.6: DISTRIBUTION OF RESPONSES AMONG TEN CATEGORIES FOR 99 FUNCTIONS OF THE Q-SORT BY LPNs IN GENERAL HOSPITALS (N=546)

	Least Important							Most Important				
VALUE	0	1	2	3	4	5	6	7	8	9		
Sort Freq:	8	8	12	14	15	14	12	8	5	3	Mean Value	Standard Deviation
FUNCTIONS												
32	10	18	56	88	106	113	98	41	14	2	4.4	1.77
33	1	5	1	20	45	93	106	120	78	77	6.4	1.74
34	2	2	7	10	37	74	106	108	113	87	6.7	1.74
35	7	5	21	40	83	105	150	100	28	7	5.3	1.68
36	48	67	134	103	91	54	36	10	1	2	2.9	1.78
37	141	123	123	73	44	22	7	9	2	2	1.9	1.73
38	7	9	29	38	79	84	128	106	54	12	5.4	1.89
39	58	66	64	99	71	59	55	34	27	13	3.6	2.40
40	4	6	13	29	77	93	145	100	60	19	5.7	1.73
41	3	1	12	29	71	141	140	88	55	6	5.6	1.53
42	4	3	10	21	49	95	135	140	65	24	6.0	1.65
43	15	27	37	76	99	136	113	30	8	5	4.4	1.78
44	14	14	26	51	87	121	138	68	24	3	4.9	1.80
45	5	21	38	61	82	109	99	72	31	28	5.0	2.03
46	25	24	66	136	73	73	38	41	32	38	4.3	2.36
47	135	143	151	74	28	7	7	1	0	0	1.6	1.34
48	2	9	9	22	52	80	90	84	66	132	6.5	2.07
49	17	18	29	68	80	53	48	69	84	80	5.5	2.54
50	49	95	135	101	69	40	33	11	6	7	2.8	1.93
51	21	31	41	82	112	106	92	39	18	4	4.3	1.93
52	8	26	55	87	111	128	94	25	10	2	4.2	1.70
53	0	2	3	13	39	49	94	114	141	91	6.9	1.66
54	84	100	115	87	78	42	18	13	6	3	2.5	1.93
55	10	8	26	74	132	157	92	40	6	1	4.5	1.52
56	0	2	2	11	27	54	103	120	143	84	6.9	1.57
57	4	12	14	41	70	113	120	82	68	22	5.6	1.86
58	160	85	103	99	60	25	8	5	1	0	1.9	1.70
59	9	20	36	80	89	112	117	49	27	7	4.7	1.87
60	29	43	85	114	115	53	55	24	22	6	3.7	2.03
61	13	19	33	52	65	67	98	98	73	28	5.4	2.23

TABLE C.6: DISTRIBUTION OF RESPONSES AMONG TEN CATEGORIES FOR 99 FUNCTIONS OF THE Q-SORT BY LPNs IN GENERAL HOSPITALS (N=546)

	Least Important							Most Important				
VALUE	0	1	2	3	4	5	6	7	8	9		
Sort Freq:	8	8	12	14	15	14	12	8	5	3	Mean Value	Standard Deviation
FUNCTIONS												
62	4	15	40	75	113	150	99	40	9	1	4.5	1.57
63	151	164	138	64	21	5	2	0	1	0	1.4	1.23
64	130	145	157	82	18	7	3	2	0	2	1.6	1.34
65	14	15	41	70	69	76	86	87	59	29	5.2	2.23
66	6	14	17	57	137	155	112	37	10	1	4.7	1.49
67	33	65	106	110	117	85	20	7	3	0	3.1	1.65
68	17	21	35	90	140	150	58	24	8	3	4.2	1.65
69	25	62	119	126	86	59	43	16	9	1	3.2	1.81
70	45	63	86	111	125	81	28	3	4	0	3.1	1.71
71	3	10	38	62	114	167	87	53	12	0	4.7	1.54
72	37	57	72	93	108	90	56	22	8	3	3.6	1.96
73	32	23	51	101	96	49	59	59	56	20	4.5	2.39
74	1	7	16	15	66	122	104	93	68	54	6.0	1.84
75	21	22	78	110	83	78	59	46	33	16	4.2	2.18
76	59	44	68	94	81	45	41	35	39	40	4.0	2.66
77	2	3	15	41	76	160	149	82	17	1	5.3	1.41
78	89	128	174	92	38	11	7	6	1	0	1.9	1.43
79	25	29	73	103	79	53	51	43	45	45	4.5	2.51
80	59	80	135	126	77	36	18	9	4	2	2.6	1.72
81	25	13	51	85	86	59	53	59	73	42	4.9	2.47
82	31	69	115	126	87	42	30	23	15	8	3.2	2.01
83	13	30	48	105	115	112	73	30	20	0	4.2	1.79
84	34	69	148	142	88	46	9	9	1	0	2.7	1.49
85	22	34	72	86	121	82	70	30	20	9	4.0	2.01
86	47	46	76	81	107	103	52	20	6	8	3.6	2.03
87	1	2	6	9	39	62	146	132	105	44	6.5	1.54
88	76	102	128	116	81	31	10	1	1	0	2.3	1.54
89	87	43	61	114	130	72	35	3	1	0	3.0	1.83
90	2	4	18	26	60	107	154	105	58	12	5.8	1.63
91	77	74	113	117	69	27	21	25	15	8	2.8	2.15

TABLE C.6: DISTRIBUTION OF RESPONSES AMONG TEN CATEGORIES FOR 99 FUNCTIONS OF THE Q-SORT BY LPNs IN GENERAL HOSPITALS (N=546)

	Least Important							Most Important				
VALUE	0	1	2	3	4	5	6	7	8	9		
Sort Freq:	8	8	12	14	15	14	12	8	5	3	Mean Value	Standard Deviation
FUNCTIONS												
92	86	58	101	100	95	44	44	14	4	0	2.8	1.96
93	74	46	63	80	72	44	45	48	41	33	3.9	2.73
94	7	16	32	70	104	84	110	87	29	7	4.9	1.88
95	234	68	107	82	35	14	5	0	1	0	1.4	1.54
96	11	23	82	122	138	82	59	26	3	0	3.8	1.61
97	51	61	96	120	132	53	23	7	1	2	3.0	1.69
98	2	0	3	15	25	65	124	128	112	72	6.7	1.59
99	3	8	21	61	64	75	91	95	80	48	5.8	2.07

TABLE C.7: DISTRIBUTION OF RESPONSES AMONG TEN CATEGORIES FOR 99 FUNCTIONS OF THE Q-SORT BY LPNs IN SERVICES OTHER THAN GENERAL HOSPITALS (N=142)

	Least Important							Most Important				
VALUE	0	1	2	3	4	5	6	7	8	9		
Sort Freq:	8	8	12	14	15	14	12	8	5	3	Mean Value	Standard Deviation
FUNCTION												
1	49	20	32	22	11	7	1	0	0	0	1.6	1.56
2	2	2	2	5	17	31	45	28	8	2	5.6	1.57
3	6	18	37	37	22	10	7	3	0	2	3.0	1.70
4	4	4	2	4	16	28	34	26	17	7	5.7	1.96
5	2	6	9	10	18	42	42	11	2	0	4.8	1.65
6	26	17	34	27	20	9	4	3	1	1	2.5	1.88
7	28	20	18	28	23	13	6	4	1	1	2.7	2.03
8	0	2	6	10	18	27	23	21	18	17	5.9	2.02
9	10	12	25	27	19	25	16	7	0	1	3.5	1.95
10	11	23	36	34	22	9	3	2	1	1	2.7	1.66
11	26	30	34	24	18	5	4	1	0	0	2.1	1.60
12	11	15	23	22	19	23	19	8	2	0	3.5	2.05
13	5	4	7	19	23	31	33	14	5	1	4.7	1.86
14	15	17	36	23	23	17	8	2	0	1	2.9	1.82
15	24	30	28	21	17	7	7	6	0	2	2.5	2.07
16	5	8	15	26	33	26	16	10	3	0	4.0	1.81
17	5	10	6	20	29	24	25	11	10	2	4.5	2.07
18	21	19	27	38	16	10	5	4	2	0	2.6	1.86
19	3	1	5	11	16	48	37	15	6	0	5.1	1.56
20	14	13	19	25	33	17	15	3	2	1	3.4	1.96
21	3	4	12	24	34	37	20	8	0	0	4.2	1.55
22	36	19	34	21	12	12	2	4	2	0	2.2	1.95
23	17	26	35	35	21	3	2	2	1	0	2.4	1.55
24	30	32	31	23	17	2	1	2	3	1	2.1	1.85
25	5	5	8	10	26	19	22	17	14	16	5.3	2.38
26	10	8	12	32	34	26	15	3	1	1	3.7	1.78
27	3	8	11	32	29	26	20	11	1	1	4.1	1.76
28	13	12	35	34	22	11	12	1	1	1	3.0	1.78
29	5	2	5	12	19	41	27	16	9	6	5.1	1.94
30	66	25	19	10	9	3	4	1	0	5	1.5	2.17
31	4	3	3	16	23	45	28	16	3	1	4.8	1.66

TABLE C.7: DISTRIBUTION OF RESPONSES AMONG TEN CATEGORIES FOR 99 FUNCTIONS OF THE Q-SORT BY LPNs IN SERVICES OTHER THAN GENERAL HOSPITALS (N=142)

	Least Important									Most Important		
VALUE	0	1	2	3	4	5	6	7	8	9		
Sort Freq:	8	8	12	14	15	14	12	8	5	3	Mean Value	Standard Deviation
FUNCTIONS												
32	2	9	7	15	23	28	27	24	5	2	4.9	1.95
33	1	3	7	7	15	27	28	20	17	17	5.8	2.07
34	0	2	4	2	3	11	29	35	32	24	6.9	1.74
35	1	4	10	17	24	18	32	20	14	2	5.1	1.95
36	17	11	33	27	19	14	15	4	1	1	3.1	1.99
37	43	31	33	12	10	4	7	2	0	0	1.7	1.78
38	2	4	14	18	33	23	23	15	8	2	4.6	1.90
39	21	15	22	31	17	15	10	6	2	3	3.1	2.21
40	2	5	13	13	17	32	29	21	10	0	4.9	1.91
41	0	2	7	13	29	33	34	16	7	1	5.1	1.58
42	4	1	1	9	29	29	29	27	9	4	5.4	1.79
43	6	12	14	33	36	20	14	4	3	0	3.7	1.75
44	8	7	15	21	21	27	24	11	5	3	4.3	2.12
45	7	16	19	24	32	19	12	8	3	2	3.7	2.01
46	12	12	19	26	27	18	12	6	5	5	3.7	2.24
47	37	30	37	20	8	6	3	1	0	0	1.8	1.58
48	2	5	7	5	18	19	24	24	21	17	5.9	2.23
49	1	3	1	9	14	21	16	24	23	30	6.4	2.14
50	6	20	24	29	18	16	10	9	8	2	3.6	2.21
51	10	15	15	23	23	15	19	14	7	1	3.9	2.27
52	12	11	23	30	31	20	11	4	0	0	3.3	1.76
53	0	0	0	1	2	13	24	35	37	30	7.3	1.35
54	20	24	11	17	25	16	9	10	4	6	3.4	2.54
55	4	7	7	10	30	36	30	15	3	0	4.7	1.77
56	0	0	0	0	6	11	40	39	39	7	6.8	1.19
57	3	4	5	7	14	34	32	17	18	8	5.5	2.01
58	27	23	9	24	25	16	8	8	1	1	2.9	2.22
59	2	5	19	25	26	32	16	6	5	6	4.3	1.96
60	4	18	18	34	39	13	6	7	2	1	3.4	1.77
61	9	8	14	19	20	26	14	19	9	4	4.4	2.32

TABLE C.7: DISTRIBUTION OF RESPONSES AMONG TEN CATEGORIES FOR 99 FUNCTIONS OF THE Q-SORT BY LPNs IN SERVICES OTHER THAN GENERAL HOSPITALS (N-142)

	Least Important								Most Important			
VALUE	0	1	2	3	4	5	6	7	8	9		
Sort Freq:	8	8	12	14	15	14	12	8	5	3	Mean Value	Standa Deviation
FUNCTIONS												
62	1	5	22	27	30	26	27	3	1	0	4.0	1.58
63	33	35	38	22	8	3	3	0	0	0	1.7	1.41
64	25	31	46	18	10	6	3	2	1	0	2.0	1.63
65	10	9	19	19	29	13	18	11	7	2	4.0	2.20
66	1	3	2	14	26	46	31	12	7	0	5.0	1.49
67	12	12	29	32	31	17	7	1	1	0	3.0	1.65
68	8	3	9	27	37	34	18	1	3	2	4.0	1.74
69	17	17	38	30	16	16	8	0	0	0	2.6	1.66
70	14	10	14	24	30	28	14	8	0	0	3.6	1.93
71	6	10	20	14	28	29	18	15	2	0	4.1	1.96
72	8	16	11	17	22	22	22	11	7	6	4.3	2.37
73	1	5	12	20	24	16	20	10	24	10	5.2	2.31
74	3	0	10	11	19	30	31	21	7	10	5.3	1.97
75	9	13	29	30	23	18	10	7	3	0	3.3	1.91
76	14	12	17	18	14	15	15	13	16	8	4.3	2.73
77	2	2	2	5	10	42	49	23	6	1	5.5	1.46
78	25	27	34	31	11	6	3	2	1	2	2.3	1.84
79	4	3	13	11	19	10	17	16	15	34	5.9	2.65
80	11	18	34	32	17	11	9	9	1	0	3.0	1.91
81	2	2	3	10	18	14	21	17	32	23	6.3	2.21
82	18	18	39	29	22	11	3	2	0	0	2.5	1.60
83	2	9	16	27	22	20	24	16	5	1	4.3	1.98
84	5	18	28	33	23	13	13	5	4	0	3.3	1.88
85	3	6	12	12	18	25	20	20	12	14	5.2	2.33
86	13	8	17	22	37	27	11	5	1	1	3.6	1.88
87	0	0	2	2	9	17	27	41	34	10	6.6	1.48
88	25	23	25	23	26	6	6	6	2	0	2.6	2.00
89	12	10	15	25	31	28	13	5	2	0	3.6	1.88
90	2	3	5	14	22	36	29	21	6	4	5.1	1.78
91	17	21	24	19	19	7	9	6	12	8	3.5	2.70

TABLE C.7: DISTRIBUTION OF RESPONSES AMONG TEN CATEGORIES FOR 99 FUNCTIONS OF THE Q-SORT BY LPNs IN SERVICES OTHER THAN GENERAL HOSPITALS (N=142)

	Least Important								Most Important			
VALUE	0	1	2	3	4	5	6	7	8	9		
Sort Freq:	8	8	12	14	15	14	12	8	5	3	Mean Value	Standard Deviation
FUNCTIONS												
92	26	14	20	24	22	11	11	8	5	1	3.1	2.33
93	9	7	11	15	20	7	13	18	21	21	5.3	2.82
94	1	3	4	16	15	24	38	23	16	2	5.5	1.81
95	44	15	12	26	25	12	5	1	2	0	2.3	2.04
96	5	6	11	37	31	28	13	11	0	0	3.9	1.67
97	16	15	23	23	31	18	11	3	2	0	3.2	1.92
98	0	0	0	0	7	15	17	47	41	15	7.0	1.30
99	2	8	16	23	33	27	14	12	6	1	4.2	1.87

APPENDIX D

VARIMAX ROTATED FACTOR MATRIX FOR 80 FUNCTIONS

TABLE D-1: VARIMAX ROTATED FACTOR MATRIX FOR 80 FUNCTIONS

FUNCTION NUMBER	NINE FACTORS AND FACTOR LOADINGS								
	1	2	3	4	5	6	7	8	9
2	.257	.194	-.162	.029	.255	.338	.062	.079	.078
3	-.261	.203	.259	-.446	-.412	.072	-.118	-.049	-.126
4	.028	-.014	.012	.011	.001	.304	.017	-.060	-.051
5	.220	.236	.154	.280	.127	.240	.001	-.041	-.056
6	-.192	.084	-.071	-.726	-.025	.040	-.051	-.013	-.096
8	.086	.186	.189	.183	.259	.234	-.240	-.231	-.158
9	-.023	.145	.326	.080	.025	.287	.287	.090	-.064
10	-.194	.216	-.350	-.418	-.419	.126	-.100	.038	-.110
12	-.226	.032	-.026	-.031	.011	-.305	.174	.003	-.357
13	.276	.103	.130	.076	.131	-.040	-.008	-.339	.146
16	.139	.062	.086	.063	.145	.004	-.007	-.108	.143
17	.056	.032	.113	.028	.042	.042	.203	.602	.001
18	-.170	.062	-.095	-.763	-.027	.032	.043	-.020	-.127
19	.246	-.239	-.023	.074	.090	.021	.336	-.006	-.032
20	.485	.007	-.124	.070	-.063	-.042	-.096	-.115	-.025
21	.165	.158	.218	.268	-.151	.094	.141	-.093	.055
25	-.118	.201	.328	-.167	.073	.239	-.088	.298	-.029
26	.482	.095	.094	.109	.120	.002	.047	-.155	.070
27	.117	.096	.431	-.056	.109	.135	-.040	.079	.070
29	.475	.219	.067	.022	.355	.201	.049	-.119	.092
31	.432	.201	-.043	.058	.225	.115	-.134	-.126	.004
32	.081	.048	.039	.264	.113	-.146	.324	-.062	-.341
33	-.029	.137	.282	-.101	.018	.174	-.136	.012	-.027
34	.109	.091	.006	.011	.406	.010	-.014	-.044	.155
35	-.036	-.021	.322	.113	-.040	.032	.340	.073	-.002
36	.003	.030	-.162	.103	.062	-.364	.025	.045	-.061
38	-.193	.019	.046	.091	-.137	-.058	.600	.130	-.146
39	-.211	.056	-.190	.046	-.055	-.230	-.089	.120	.090
40	-.064	.106	.163	.036	.108	.163	.071	.075	.081
41	.097	.247	.080	-.027	.105	.358	-.024	.057	.118
42	-.119	-.000	.024	.025	-.112	.080	.698	.058	-.045
43	-.141	.096	.329	.186	-.074	-.009	.104	.039	-.076
44	.052	.234	.277	.137	.118	.066	.084	.026	-.064
45	-.285	.017	.274	.019	-.203	-.086	.029	.228	.153
46	-.321	-.049	.175	.014	-.281	-.022	-.182	.004	-.037
48	.116	.099	.085	-.052	.408	-.029	-.074	-.014	-.011
49	-.065	-.748	-.165	.017	-.017	-.037	.029	.009	-.028
50	.035	.184	-.319	-.192	-.276	.174	-.162	-.185	.078
51	-.008	-.156	-.242	.019	-.134	-.099	-.133	.166	.226
52	-.064	.088	.446	.106	.028	-.054	.004	-.083	-.056

TABLE D-1 : VARIMAX ROTATED FACTOR MATRIX FOR 80 FUNCTIONS
(Continued)

FUNCTION NUMBER	NINE FACTORS AND FACTOR LOADINGS								
	1	2	3	4	5	6	7	8	9
53	.165	.155	-.229	.047	.364	.446	-.045	-.017	.028
54	.128	-.133	-.229	.111	-.068	-.254	-.026	-.106	.126
55	.523	.159	.065	.014	.347	.260	-.019	-.062	.040
56	.017	.187	-.189	.141	.234	.463	.119	.034	.041
57	.221	.115	.112	.083	.242	.416	-.118	-.039	-.172
58	.382	.122	-.041	.091	-.073	.004	-.070	-.224	-.096
59	-.107	.061	.468	.060	-.034	.015	.052	-.037	-.047
60	-.231	-.366	.072	.031	-.192	-.076	-.047	-.035	.097
61	-.204	.038	.032	.057	-.065	-.087	.041	.598	-.112
62	-.048	-.044	.408	.056	.016	.117	.044	-.034	.031
65	-.028	.038	.085	.049	-.099	-.063	-.043	.563	-.126
66	.399	.253	-.104	.108	.122	.318	.033	-.094	.095
67	.099	.047	.313	.044	-.128	-.053	.194	-.156	.008
68	.524	.192	-.012	.006	.144	.239	.066	.049	.138
69	.035	.048	.057	-.749	.032	.712	.017	-.053	.071
70	.488	.071	-.046	.035	.109	-.007	-.049	-.088	-.035
71	.053	.001	.288	-.072	.075	-.006	.472	-.016	.011
72	-.075	-.057	-.235	-.204	.032	-.165	-.075	-.078	.062
73	-.238	-.700	-.143	-.016	-.107	-.013	-.052	-.037	-.027
74	.162	.116	-.066	-.084	.412	.009	.040	.063	.091
75	-.299	.077	-.015	-.170	-.325	-.071	-.178	.152	.082
76	-.277	-.513	-.176	.023	-.095	-.162	-.067	.076	-.076
77	.374	.084	-.026	.011	.330	.207	.156	-.025	-.042
79	-.086	-.419	-.335	.157	-.038	-.239	-.172	.043	-.084
81	-.145	-.744	-.217	.046	-.158	-.021	.078	-.058	-.031
82	-.031	.060	-.065	-.733	-.011	-.025	-.067	.029	.015
83	-.137	-.247	.084	.059	-.098	-.172	.048	-.036	-.071
85	.042	-.183	-.248	.112	-.012	-.350	-.058	-.022	.114
86	.228	.081	.018	.088	.102	-.047	-.243	-.033	.079
87	.006	.123	.005	.037	.600	.147	-.181	-.133	-.016
88	-.023	.083	-.062	.052	.067	-.061	-.015	-.192	.465
89	.552	.103	-.138	.046	.018	.051	-.164	.005	.010
90	.244	.215	.136	.001	.416	.299	-.004	.141	.015
92	-.114	.022	-.205	.142	.082	-.361	.015	-.047	.070
93	-.152	-.295	-.351	.190	-.164	-.325	-.079	.065	-.051
94	-.040	-.592	-.045	.120	-.146	-.083	.073	.034	-.028
96	.042	.023	.304	.062	.043	-.046	-.012	-.249	.105
97	.008	.110	-.039	.107	.166	-.120	-.132	-.141	.434
98	-.026	.184	.002	.113	.515	.255	.206	-.121	-.105
99	-.311	.107	.504	.003	-.044	.072	-.039	.141	-.038