MEASURING NURSING RESOURCES

U.S. Public Health Service

FEDERAL SECURITY AGENCY
PUBLIC HEALTH SERVICE
DIVISION OF MEDICAL & HOSPITAL RESOURCES
DIVISION OF NURSING RESOURCES

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CONTENTS

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FEDERAL SECURITY AGENCY
PUBLIC HEALTH SERVICE

Washington 25, D. C.

August 4, 1949

Col. J. J. McNinch
Director
Army & Medical Library
7th and Independence Ave.
Washington 25, D. C.

Dear Col. McNinch:

Enclosed is a copy of "Measuring Nursing Resources", prepared by Miss Lois E. Gordner, hospital nursing consultant, of our staff.

This is intended as a guide to a method for nurses and others who contemplate studies to determine nursing needs and resources on an area basis. It represents to date the method that has evolved as a result of assistance given by the Public Health Service to several States in measuring their nursing resources.

Copies are available upon request.

Sincerely yours,

Lucile Petry

Lucile Petry
Chief Nurse Officer
Public Health Service

J R McGibony

J. R. McGibony, Medical Director
Chief, Division of Medical and
Hospital Resources

Enclosure

Tables

Tables Page

Tables. Page

Charts

Introduction

During the past ten years the demands for nursing services have been unprecedented. Some of the major developments which have contributed to these increasing needs are: the rapid expansion of prepayment hospital plans; increased emphasis on early diagnosis; greater awareness of the preventive aspects of disease; acceptance of the relationship between physical and mental states; and recent discoveries in drugs and medical therapies. The additional number of hospital beds and other health facilities which will become available within the next few years (as a result of construction under the "Hospital Survey and Construction Act" as well as construction outside of this program) will further increase the need for professional and non-professional nursing personnel. The extent and urgency of the situation indicate the necessity of planning on a State and regional basis if the vital needs for nursing services are to be met effectively and economically.

The scope of a State survey of nursing needs and resources as described in this Manual includes the following factors:

1. An estimate of the number of nursing personnel currently employed.
2. An estimate of the number of nursing personnel required to meet current and future needs.
3. An evaluation of the quantitative and qualitative adequacy of the present system of nursing education.
4. Recommendations which will improve the quantity and quality of nursing personnel so that current and future needs for nursing personnel can be met effectively and economically.

The conclusions of the study will reveal present nursing resources; current and future need for nursing personnel; current and future deficits of nursing personnel; extent to which the present educational system can quantitatively and qualitatively meet current and future needs for professional nurses and

non-professional nursing personnel; annual number of students who must be enrolled in basic schools of nursing and training programs for non-professional nursing personnel for a specified period of time to meet estimated needs; and the average percent of high school graduates who must be enrolled in nursing programs to produce the number of nursing personnel needed. These conclusions will lead to recommendations concerning:

1. The extent to which the nursing service needs of all kinds should and can be met.
2. The kind of educational system which will produce the type of nursing personnel needed.
3. Methods of financing this educational system.
4. How the needed number of candidates can be attracted to the schools.
5. What community, State, and regional action is necessary to initiate and advance the objectives.

The approach to this type of survey (discussed in the following sections) is to be considered only as a guide. It is primarily a method of assembling available data and utilizing existing standards and techniques to emphasize the necessity of comprehensive planning to meet estimated needs for nursing personnel. The limitations apparent in this approach stress the necessity of additional research in nursing.

The purpose of the following discussion is to emphasize specific considerations. General principles of the survey method will not be mentioned unless there is special significance for a State survey of nursing needs and resources which should be stressed. The Methodology of Educational Research[1], is but one example from extensive published material which comprehensively presents the techniques of scientific research.

1/ Good, Carter; Barr, A. S.; Scates, Douglas: The Methodology of Educational Research. D. Appleton - Century Company, Inc., New York, 1941.

The director of the study should be appointed as soon as the need for the survey has crystallized. This nurse should possess a comprehensive knowledge of professional problems and community health needs, an understanding of present trends in education and the ability to work cooperatively with others. The selection of the individual to direct the study is the responsibility of the nursing organizations of the State. Related professional organizations (State Medical Association, State Hospital Association, etc.) should concur in the choice.

The participation of representative committee members in formulating a precise plan for the survey and in initiating and sustaining community interest in the project which will be capable of translating the recommendations into action will largely determine the effectiveness of the project.

Committees should be organized as soon as a need for this type of survey has been recognized and expressed. The stimulus for this expression of need may come from a number of sources. It is imperative that all of the groups involved in the study be made a part of the project from the initial phase. This widely representative group will function more effectively if organized into advisory, executive, and technical committees.

Advisory Committee

The advisory committee should include State representatives from: Nursing organizations; related fields; and consumers of nursing service. Appropriate members in these three categories are:

1. Nursing Organizations
   a. Nurses' Association
   b. League of Nursing Education
   c. Organization for Public Health Nursing
   d. Board of Nurse Examiners
   e. Organization for Non-professional nursing personnel.

2. Related Fields

   a. Medical Association

   b. Hospital Association

   c. Agency administering Hospital Survey and Planning Program

   d. Board of Health

   e. Department of Education (Vocational, Secondary, and Higher Education)

3. Consumers of Nursing Service

   a. Federated Women's Club

   b. Parent-Teacher Association

   c. Industry (management, labor)

   d. Farm groups

   e. Press

Executive Committee

The Executive Committee may be chosen from the Advisory Committee. It is advisable to limit this group to 5 - 7 members. The members should be selected on the basis of ability, pertinent knowledge, and administrative effectiveness. The function of this committee is to facilitate the progress of the survey and to be readily available for consultation with the director of the study.

Technical Committee

The Technical Committee should be composed of professional nurses with specialized interests, since a large part of the survey involves decisions relative to standards, practices, and policies in the several fields of nursing. Members should represent the following interests:

1. Nursing groups
   a. Public Health
   b. Industry
   c. Offices
   d. Private Practice
   e. Men nurses
   f. Non-professional nursing personnel
2. Clinical fields
   a. Medical nursing
   b. Surgical nursing
   c. Tuberculosis nursing
   d. Psychiatric nursing
   e. Nursing care of chronic patients.
3. Educational programs
   a. Hospital operated school of nursing
   b. College or university controlled school of nursing
   c. Advanced professional nursing education program
   d. Approved training program for non-professional nursing personnel.

This group of expert professional personnel is primarily a "working committee". In view of this, the director of the study may find it expedient to appoint sub-committees from the membership to formulate policies and develop material in specified areas (current and future needs for nursing personnel in hospitals, construction of questionnaires, etc.) for the consideration of the technical committee as a whole.

It is advisable to have the three committees (advisory, executive, technical) meet together at the beginning of the project to formulate the plan and method of the survey. A combined meeting is equally desirable after the necessary data have been compiled and evaluated. At this second meeting it is essential that a majority of the membership concur with the analysis, accept the implications, and make definite plans to activate the recommendations. In the interim between the two meetings, distribution of the minutes of all the individual committees' meetings to the entire membership will keep the various committees informed of the others' activities.

There are certain practical factors which must be considered in making a detailed plan within the defined scope of the survey. Such matters as time, money, and personnel must be faced realistically in the planning stage of the project. If a deadline must be met, if funds are limited, clerical assistance is inadequate, it is essential to acknowledge the handicap and devise the most effective plan possible to fulfill the objectives of the survey.

It is reemphasized that the effectiveness of the survey relies to a great extent upon the acceptance and support of the groups concerned. It is important that the report be written with consideration for varying backgrounds and diversity of interests.

The recommendations of the survey should be reviewed periodically. This appraisal at specified intervals will accomplish two purposes. First, it will reveal the progress made toward achievement of the stated objectives. Second, it will provide a means by which the objectives can be modified in terms of emerging medical, social and economic trends.

SECTION I. ESTIMATING THE NUMBER OF NURSING PERSONNEL CURRENTLY EMPLOYED

In an appraisal of nursing needs and resources, the number of nursing personnel currently employed should be estimated as accurately as possible. Estimates should include both professional nurses and non-professional nursing personnel. It is suggested that data on non-professional nursing personnel be limited to those individuals who give direct care to patients.

It is desirable to assemble the final estimate according to "place of service". Such a classification should include: public health, industry, private practice, offices, hospitals, and "others". This last category includes nurses employed by professional nursing organizations, nurses' registries, county institutions, college infirmaries, nursery schools, etc. The preceding classification is indicated because the sources for obtaining the required data vary, and the existing standards for nursing care are applicable to specific fields of nursing.

To arrive at an estimated total, existing data should be used whenever available. An example is the recent count and classification of professional registered nurses made by the American Nurses' Association. This is probably the most complete enumeration of professional nurses per State available. Reports can be obtained from the State Board of Nurse Examiners or the American Nurses' Association (1790 Broadway, New York City, N.Y.). If additional data are desired, interviews, conferences, and questionnaires are methods to be considered.

Field visits are generally more satisfactory in obtaining homogeneous data than information received through mailed questionnaires. Conversation is conducive to greater uniformity in the collected data because of the opportunity to clarify and interpret the information desired. Homogeneity is more difficult to achieve in a mailed questionnaire despite the most thoughtfully phrased and explicit instructions.

If a mailed questionnaire is unavoidable every effort should be made to facilitate the receipt of the necessary data. A favorable response will depend to a large

extent on the following factors: a covering letter which embodies the purpose of the survey, contains an endorsement from appropriate professional organizations, and gives assurance that the data obtained will be considered confidential; concise inquiries clearly defined and easily answered; and the enclosure of a self-addressed, stamped envelope or post card. A plan of "follow up" for unreturned questionnaires is important. An effective method is a telephone reminder from the local group concerned with the data requested.

The following discussion will present for each classification:

1. probable sources of existing information
2. sample questionnaires and tables
3. certain factors which will influence the collection, compilation, and/or interpretation of the material.

Public Health

A yearly census of public health nurses in each State can be obtained from the State Department of Health. This count is current as of January first. The number of public health nurses employed can be obtained for each county or as a State total. It is possible to obtain the number of nurses employed: by type of public health agency (State health department, local departments of health, boards of education, other official agencies, non-official agencies, and schools of nursing); and by type of position (supervisory or staff). Each year, the States' annual census of public health nurses is incorporated into a consolidated report, which provides a comparison among States. The consolidated report can be obtained either from the Division of Nursing, State Department of Health, or by writing directly to the Federal Security Agency, Public Health Service, Office of Public Health Nursing, 4th and C Streets, S.W., Washington 25, D. C.

The following table illustrates how this information might be compiled.

Table 1. Estimated number of nurses employed by public health agencies in (State x), (Date)

Type of Agency	Number of nurses	
	Supervisors	Staff
Total - - - - - -		
Official agencies - - - - - - - - - -		
Boards of education - - - - - - - - -		
Non-official agencies - - - - - - - -		

Source:

Industry

The Division of Nursing, State Department of Health or the State Department of Labor will have information on the number of registered nurses employed full time by industries as of January first of each year. This report shows the type of service in which the nurses are engaged (according to the one to which the nurse devotes the most time). The type of service includes the following categories: in-plant; home or visiting nurse; industrial hospital nurse; personnel department; and consultant or advisory nurse. The nurses are further classified by type of position (supervisory and staff). A consolidated report which provides a comparison among the States, can be obtained either from the above sources or from the Federal Security Agency, Public Health Service, Nursing Section of the Industrial Hygiene Division, 4th and C Streets, S.W., Washington 25, D. C.

Table 2 shows how this material can be assembled.

Table 2. Estimated number of nurses employed by industrial establishments in (State x), (Date)

Type of Service	Number of nurses	
	Supervisors	Staff
Total - - - - - -		
In-plant - - - - - - - - - - - - - - -		
Home or visiting nurse - - - - - - -		
Industrial hospital nurse - - - - -		
Personnel department - - - - - - - -		
Consultant or advisory nurse - - - -		

Source:

Offices and Private Practice

The number of nurses currently employed in these two categories is difficult to estimate. The State Nurses' Association and the State Board of Nurse Examiners are probably the two best sources of information. An analysis of the types of nursing activities of the members of the State Nurses' Association is one basis that can be used. It must be kept in mind, however, that membership in this organization is voluntary and available only to the registered professional nurse. The State Board of Nurse Examiners may have the desired information, if registration in the State requires the registrant to indicate the field of nursing in which currently engaged. It is important to determine whether non-professional nursing personnel are included in the registrants. Whether membership in the State Nurses' Association or registration in the State is used as the basis for making the estimate, there are certain

considerations which apply to both. These pertain to the number of nurses included in the counts who are inactive or who function outside of this State. If existing data are not sufficient, it may be necessary to secure the information through other means.

The best method of obtaining additional information relative to nursing personnel currently employed in offices should be discussed with appropriate State societies (medical, dental, etc.). Such conferences should result in a cooperative plan to obtain the required material. A subsequent activity of such a meeting might be the participation in this project by the respective county societies. If a questionnaire is contemplated, the number of licensed physicians, dentists, etc, in the State may indicate the feasibility of a representative sampling rather than a complete canvass. The following questionnaire and the accompanying covering letter is one method that can be used to obtain the desired information.

Example of a covering letter to accompany a mailed Questionnaire to employers of nursing personnel in offices.

(Date)

(Addressee)

Dear (name of individual physician, dentist, etc.)

The (State medical, dental, etc.) Association is cooperating with the (name of the group sponsoring the survey) in making a study of the number of nursing personnel currently employed in (doctors', dentists', etc.) offices. This project is an important aspect of the survey of nursing needs and resources of (State).

In order to estimate the total number of professional and non-professional nursing personnel currently employed, it is necessary to know the number of nursing personnel in offices. Since this information cannot be obtained from any existing data, (number) of (physicians, dentists, etc.) have been selected to assist in the study by answering the questions on the enclosed post card. Information received from the participating (physicians, dentists, etc.) will be considered confidential.

Your response to this request will be of inestimable value. We will appreciate it if you will mail the enclosed post card not later than (date).

Sincerely yours,

(Chairman of the group sponsoring the survey)

Enclosure

(individually addressed, stamped post card)

Questionnaire 1: Self-addressed, stamped post card to be mailed to individual employers of nursing personnel in offices.

Date_____

To (Name of group sponsoring survey)

The following nursing staff is now employed in my office:

Type of Nursing Personnel	No. of Persons	Average Hrs. per Wk.
Graduate Nurse (RN)	____	_____
Non-Professional Nurse	____	_____

This nursing staff is shared with:

(Identifying Code number of physician, dentist, etc.)

Table 3 suggests a method of summarizing the data collected by Questionnaire 1.

Table 3. Estimated number of nursing personnel employed in offices in (State X), (Date).

Type of office	Number of nursing personnel	
	Professional	Non-professional
Total - - - - - - - - -		
Doctors - - - - - - - - - - - - - - - - -		
Dentists - - - - - - - - - - - - - - - - - -		
Others (specify) - - - - - - - - - - - - -		

Source:

Detailed information about the number of nursing personnel engaged in private practice may be secured from professional and commercial nurses' registries. A list of licensed nurses' registries can be secured from the State Department of Labor or the appropriate State agency whose responsibility is to define, regulate and provide for the licensing and registration of employment agents. Material from the individual registries can be more effectively collected through personal interviews with the employers because of the variance in record keeping and the possible duplication of registrants. The amount of duplication can be revealed by selecting several letters of the alphabet and cross matching the names of the personnel appearing on the active rolls of the individual registries.

If the number of nursing personnel engaged in private practice is obtained only from licensed nurses' registries, the data will not be complete. This source will not include those nurses who are placed without charge through the activity of such agents as hospitals, alumnae associations, private physicians, etc. It may not be possible to obtain information on the number of nurses in private practice who are placed in this way. If this is the case, the omission in the total count must be acknowledged.

Questionnaire 2 is an example of how information in the number of nursing personnel engaged in private practice can be obtained from licensed nurse registries.

Questionnaire 2. **Self-addressed, stamped post card to be mailed to the registrar of individual licensed nurses' registries.**

(Date)_____

To (Name of group sponsoring survey)

This registry has currently registered and placed nursing personnel as follows:

Graduate Nurses (RN)

Total number currently registered _____

Number on cases today:
Total _____
In hospitals _____
In homes _____
Other _____

Non-Professional Nurses

Total number currently registered _____

Number on cases today:
Total _____
In hospitals _____
In homes _____
Other _____

(Identifying Code number of licensed nurse registry)

Table 4 shows how the information obtained through Questionnaire 2 can be compiled.

Table 4. Estimated number of nursing personnel engaged in private practice, registered in and employed through licensed nurses' registries in (State X) (Date).

Type of registry	Number of nursing personnel			
	Professional		Non-professional	
	Total registered	Total employed	Total registered	Total employed
Total - - - -				
Professional - - - - - - - - - - - -				
Commercial - - - - - - - - - - - - -				

Source:

Hospitals

It is desirable to assemble data relative to the number of nursing personnel employed by the following types of hospitals:

1. General and allied special
2. Tuberculosis
3. Mental
4. Chronic

Utilization of the preceding classification facilitates the computations involved in estimates of present and future needs for nursing personnel in two ways. First, existing standards of nursing care can be more easily applied. Second, future needs for nursing personnel based on the anticipated construction of hospital beds as proposed by the State hospital plans 1/ correspond with the suggested categories.

1/ State hospital plans in this Manual refers to the plans developed under the Hospital Survey and Construction Act. (Public Law 725, 79th Congress)

Since the number of nursing personnel currently employed in hospitals will be compared with the number of nursing personnel estimated as needed by hospitals, the advantage of having similar data is obvious.

An existing source of information for the number of nursing personnel employed by hospitals is Hospital Service in the United States 1/. This annual statistical summary is published each year in the Hospital Number of the Journal of the American Medical Association, and can be obtained as a reprint from the Council on Medical Education and Hospitals, 535 North Dearborn Street, Chicago 10, Illinois. It is based on reports submitted by registered hospitals, both civilian and governmental. The latest twelve month period for which statistics are available represents the reporting period. The table "Nursing Personnel and Schools of Nursing Education" contains a State total of each of the following categories of nursing personnel:

1. Student nurses
2. Administrative nursing personnel
3. Full time instructors
4. Supervisors and assistant supervisors
5. Head nurses and assistant head nurses
6. General duty nurses (part time and full time)
7. Nurses not classified
8. Private duty nurses
9. Practical nurses and attendants
10. Volunteer nurses' aides
11. Orderlies
12. Ward maids

1/ Arestad, F. H., Leveroos, E. H., Albus, W. R., and Corbett, W. W.: Hospital Service in the United States. Council on Medical Education and Hospitals of the American Medical Association, Chicago, Illinois.

While the published material contains the preceding information as a total for each State, it has been possible to obtain the information for each category of nursing personnel in the individual hospitals in the State from unpublished material on file with the Council on Medical Education and Hospitals.

If the data from the Council on Medical Education and Hospitals is utilized, the following suggestions should be considered:

1. Student Nurses

   This category of nurses should not be included in an estimate of the number of nursing personnel employed. However, in estimating the number of nurses needed it is necessary to know the number of student nurses so that their contribution to nursing service may be included in terms of replacement equivalents of professional nurses and non-professional nursing personnel.

2. Part Time General Duty Nurses

   It would seem reasonable to count the services of each part time general duty nurse as equivalent to one-half of the service of a full time general duty nurse.

3. Nurses Not Classified

   These nurses might be assumed to be staff nurses in special hospital departments such as central supply room, operating room, etc.

4. Private Duty Nurses

   This group of nurses should be excluded from the hospital tally. As discussed previously, the professional and non-professional nursing personnel engaged in private practice in homes and hospitals should be considered as a separate group and so enumerated in the total count.

5. Volunteer Nurses' Aides and Ward Maids

   If the non-professional personnel is to be limited to those who give

direct care to patients then these two groups should be omitted.

The statistical material from the Council on Medical Education and Hospitals pertains only to registered hospitals and sanatoriums, and related institutions. The number of nursing personnel in unregistered hospitals and sanatoriums, and related institutions can be obtained by means of a questionnaire. Probably the most recent data relative to the number and location of unregistered hospitals can be secured from the State agency administering the Hospital Survey and Planning Program. When the individual hospitals in the latest State survey are cross matched with the individual registered hospitals in the State listed in Hospital Service in the United States for the corresponding period of time, the number of unregistered hospitals in the State will be revealed.

If the data compiled by the Council on Medical Education and Hospitals relative to the number of nursing personnel employed by hospitals are not used, similar information can be secured through a questionnaire to all hospitals, sanatoriums, and related institutions in the State. Plans for such a project should be made in cooperation with the State Hospital Association. An endorsement from this agency to hospital administrators will be of inestimable help in the collection of the desired facts.

Whether information on the number of nursing personnel is requested from registered and unregistered or only registered hospitals in the State, the solicited data should include all nursing personnel employed by the hospitals. The following questionnaire (which is to be mailed to individual hospitals) illustrates how a total count of nursing personnel employed by a single hospital can be obtained.

Questionnaire 3: Mailed questionnaire to individual hospitals to obtain a record of the number of nursing personnel currently employed.

TO: (Name of group sponsoring survey)

HOSPITAL _____

ADDRESS _____

Record of the number of nursing personnel currently employed 1/ (Date: month, day, year)

	Number of Nursing Personnel	
	Full Time	Part Time
	Total	Total
A. Graduate Nurses (R.N.) - list each nurse in the following classifications according to the one in which she devotes most time.		
I. Administrative Nursing Personnel		
a. Superintendent or assistant superintendent of hospital - - - - - - - - - - -		
b. Superintendent and assistant superintendent of nurses and/or nursing school -		
II. Instructors - - - - - - - - - - - - - - - -		
III. Supervisors, assistant supervisors (charge of more than one nursing unit) Head nurses, assistant head nurses (charge of one nursing unit only)		
a. General services: medicine; surgery; obstetrics; pediatrics - - - - - - - - -		
b. Tuberculosis service - - - - - - - - - -		
c. Psychiatric service - - - - - - - - - -		
d. Operating room - - - - - - - - - - - -		
e. Central supply room - - - - - - - - - -		
f. Out-patient department - - - - - - - - -		
g. Other (specify) _____ - - - - - - - - - - - -		
_____ - - - - - - - - - - - -		
IV. Staff nurses (include those nurses giving a minor part of their time to head nurse duties or other supervisory function)		
a. General services: medicine; surgery; obstetrics; pediatrics - - - - - - - - -		
b. Tuberculosis service - - - - - - - - - -		
c. Psychiatric service - - - - - - - - - -		
d. Operating room - - - - - - - - - - - -		
e. Central supply room - - - - - - - - - -		
f. Out-patient department - - - - - - - - -		
g. Other (specify) _____ - - - - - - - - - - - -		
_____ - - - - - - - - - - - -		
B. Non-professional Nursing Personnel (those who spend the major part of their time assisting with nursing duties) Attendants, Practical Nurses, etc. - -		

1/ Include nursing personnel on afternoon and night duty as well as those off duty because of days off, vacation, or illness.

Should the number of nursing personnel in Federal hospitals in the State be included in the total estimate of the number of nursing personnel employed by hospitals in the State? Recruitment for these hospitals is generally on a regional or national basis with personnel subject to transfer in accord with different personnel policies. The State may be assumed to have special responsibility to provide nursing personnel to care for its citizensin the Veterans Administration hospitals within its borders. However, there is no known standard by which to estimate the degree of this responsibility. Since the count of nursing personnel currently employed is to be used in relation to the number of nursing personnel estimated as needed, the various staffing patterns of the Federal hospitals preclude the application of existing standards by which the number of nursing personnel needed in civilian hospitals is calculated. Moreover, anticipated construction of hospital beds as proposed by the State hospital plans (which serves as the basis for estimating the number of nursing personnel needed in the future) does not include the needs of the Federal hospitals.

Table 5 is a convenient way of assembling the data on the number of nursing personnel currently employed by hospitals.

Table 5. Estimated number of nursing personnel employed by (registered and unregistered or registered only) hospitals (exclusive of or including Federal hospitals) in (State X), (Date).

Type of hospital	Number of nursing personnel	
	Professional	Non-professional
Total - - - - - - - - -		
General and allied special - - - - - - - - - -		
Tuberculosis - - - - - - - - - - - - - - - - - -		
Mental -		
Chronic -		

Source:

Summary: Section I

Table 6 summarizes the estimates of the number of nursing personnel currently employed in the State according to place of service (see Tables 1, 2, 3, 4, 5).

Table 6. Estimated number of nursing personnel currently employed in (State X), (Date).

Place of Service	Number of nursing personnel	
	Professional	Non-professional
Total		
Public Health		
Industry		
Offices		
Private practice		
Hospitals 1/		
Other		

1/ Registered and unregistered or registered only; exclusive of or including Federal hospitals.

Source:

The following chart is a condensation of the discussion in Section I relative to the probable sources of information for obtaining an estimate of the number of nursing personnel currently employed in a State according to place of service.

Chart 1. Probable sources of information for obtaining an estimate of the number of nursing personnel currently employed in a State according to place of service.

Place of service	Probable sources of information Existing data relative to the number of nursing personnel currently employed	Contributory material
Note: Field of employment for professional registered nurses	American Nurses' Association Count and Classification of professional registered nurses 1. State Board of Nurse Examiners 2. American Nurses' Association	
Public Health	Census of Public Health Nurses 1. State Department of Health, Division of Nursing 2. Federal Security Agency, Public Health Service, Office of Public Health Nursing	
Industry	Census of Industrial Nurses 1. State Department of Health, Division of Nursing or State Department of Labor 2. Federal Security Agency, Public Health Service, Nursing Section of the Industrial Hygiene Division	
Offices	1. State Nurses' Association 2. State Board of Nurse Examiners	List of individual employers of nursing personnel in office from the appropriate State associations such as the State Medical and Dental Societies.
Private practice	1. State Nurses' Association 2. State Board of Nurse Examiners	List of licensed nurses' registries from the State Department of Labor, or the appropriate State agency whose responsibility is to define, regulate, and provide for the licensing and registration of employment agents.
Hospitals	1. Council on Medical Education and Hospitals of the American Medical Association	List of unregistered hospitals from the State agency administering the Hospital Survey and Planning Program.

SECTION II. ESTIMATING THE NUMBER OF NURSING PERSONNEL REQUIRED TO MEET CURRENT AND FUTURE NEEDS.

Having estimated the number of nursing personnel currently employed, an appraisal of the number of nursing personnel required to meet current and future needs is indicated. When this need has been estimated, it will then be possible to see the present situation by subtracting the number of nurses currently employed from the number of nurses currently needed. What is disclosed in the preceding computation must also be considered in conjunction with future needs for nursing personnel. Such an analysis will define the quantitative aspect of the relationship between the supply of and the need for nursing personnel.

Estimates of current and future needs should include the number of professional and non-professional nurses required to give direct patient care as well as the quota of professional nurses required for administrative and supervisory positions. The question of what constitutes adequate nursing service is difficult to determine in the absence of firmly established standards in certain areas of nursing. Until research provides guides for these situations, logical assumptions can be made and must be plainly identified as assumptions.

The following discussion will present:

1. suggested criteria for estimating current and future needs
2. formulae for computing the number of nursing personnel required to meet the suggested criteria
3. factors influencing the estimate of needs.

Public Health

The need for public health nurses is computed on a ratio of public health nurses to population. Local Health Units For The Nation 1/ suggests a ratio of 1 public health nurse to 5000 population. This ratio is based on a generalized public health program. It includes school nursing, but not bedside care of the sick. If the public health nurse is to give health guidance and bedside care to the entire family, Desirable Organization of Public Health Nursing For Family Service 2/ recommends that 1 public health nurse should be provided for approximately every 2000 people. This same article states that "adequate provision should be made for nursing supervision in the ratio of 1 qualified supervisor for every 10 nurses".

The selection of the standard to use in estimating the unit of population per public health staff nurse should be based on the current situation. Application of Formula 1 will reveal the current unit of population per staff nurse.

Formula 1 - Current Unit of Population Per Public Health Staff Nurse

$$\frac{\text{Current population}}{\text{current number of public health staff nurses}} = \text{current unit of population per public health staff nurse}$$

Example:

$$\frac{10{,}500{,}000 \text{ current population of State X}}{1500 \text{ current number of public health staff nurses}} = 7000 \text{ current unit of population per public health staff nurse.}$$

1/ Emerson, Haven: Local Health Units For The Nation. Commonwealth Fund, New York, 1945

2/ Committee representing National and Federal agencies concerned with public health nursing: Desirable organization of public health nursing for family service. Public Health Nursing 38:387-389 (August 1938)

In addition to the preceding computation, answers to the following questions (obtained through conferences with the directors of nursing of public health agencies in the State) will influence the decision involving a choice of the 1- 5000 or 1 - 2000 ratio. Do the functions of the public health agencies indicate an overlapping of nursing activities? Is the nursing service provided geographically adequate? How much bedside care is being given? Is there a demand for care for the chronically ill patients at home? Are non-professional nursing personnel included in the public health team? How many budgeted nursing positions are unfilled?

Having determined the standard to use in estimating the current need for public health staff nurses to population (based on the practical consideration of the current situation), Formulae 2 and 3 will disclose the number of staff nurses and supervisors needed.

Formula 2. Number of public health staff nurses required to meet the selected standard of population unit per nurse.

$$\frac{\text{Population}}{\text{selected standard of population unit per public health staff nurse}} = \text{Number of public health staff nurses required to meet the selected standard of population unit per nurse}$$

Example:

$$\frac{\text{10,000,000 current population of State X}}{\text{5000 selected standard of population unit per public health staff nurse}} = \text{2000 public health staff nurses currently needed to meet the 1 - 5000 ratio of public health staff nurses per population.}$$

Formula 3. Number of public health nurses in supervisory positions required to meet the standard for staff nurses per supervisor

$$\frac{\text{Required number of public health staff nurses}}{\text{Standard for public health staff nurses per supervisor}} = \text{Number of public health nurses in supervisory positions required to meet the standard for staff nurses per supervisor}$$

Example:

$$\frac{\text{2000 public health staff nurses currently needed to meet the 1 - 5000 ratio of public health staff nurses per population}}{\text{10 standard for the number of staff nurses per supervisor}} = \text{200 public health nurses in supervisory positions currently needed to meet the 1 - 10 ratio of supervisors per staff nurses.}$$

To use Formula 1 and 2 it is necessary to have an estimate of:

1. current population of the State
2. projected population of the State as of a future date.

The most recent copy of Current Population Reports (published annually by the Bureau of the Census, United States Department of Commerce) is the most reliable source for obtaining an estimate of the current population of the State. The State Planning Committee (or its counterpart) will probably be the best source to secure an estimate of the projected population of the State as of a future date.

The following table shows a convenient way to assemble the estimate of current and future number of nurses needed by public health agencies.

Table 7. An estimate of the current and future number of nurses needed by public health agencies in (State X).

Type of Agency	Number of nurses needed			
	Current (Date)		Future (Date)	
	Supervisors	Staff	Supervisors	Staff
Total				
Official agencies. . .				
Boards of education. .				
Non-official agencies.				

Source:

Industry

The number of nurses needed by industrial establishments depends to a great extent on the number of workers. Nursing Practice In Industry 1/ recommends (for the maintenance of complete health services in an industry) the following ratios of nurses per employees:

1 nurse . . . . . up to 300 employees

2 or more nurses . . . . . up to 600 employees

3 or more nurses . . . . . up to 1,000 employees

1 nurse per each additional 1000 employees up to 5000; and

1 nurse per additional 2000 employees.

1/ Whitlock, Olive M., Trasko, Victoria M., and Kahl, F. Ruth: Nursing Practices in Industry. Public Health Bulletin No. 283, U. S. Government Printing Office, Washington, 1944.

Utilization of the preceding standard involves a tabulation of the number of industrial establishments and employees according to the size of the establishment. It will also be necessary to make a decision relative to the minimum size of an establishment to be included in the category "up to 300 employees".

The following factors also have an influence on the estimate of the number of nurses needed by industrial establishments:

1. Extent of medical and health programs
2. Occupational hazards
3. Additional shifts
4. Amount of nursing participation in health education activities and home nursing service
5. Utilization of part-time nursing services in establishments employing less than 100 workers
6. Tendency to employ non-professional nursing personnel
7. Provision for nursing supervision (furnished either by a member of the nursing staff at the plant or by advisory service from the State department of health, insurance companies, etc.).

Estimates of <u>future</u> needs will depend upon plans for industrial expansion. Discussions relative to this potential growth should also include a consideration of the social and economic trends in the State, as well as possible technological advances in the major types of industry represented.

It is evident from the preceding discussion that realistic estimates of present and future needs for nurses in industry require considerable auxiliary information. The State Industrial Hygiene Personnel (to be found either in the Board of Health or the Department of Labor) will probably be the best source. The State Chamber of Commerce, Manufacturers' Association, and the State Planning Commission (or its counterpart) are other contacts which may prove helpful.

The following table is suggested as a pattern for estimating either current or future needs for nurses in industrial establishments.

Table 8. An estimate of the number of nurses needed by industrial establishments in (State X), (Date).

Size of industrial establishments	Number of Plants	Number of Employees	Number of Nurses Needed
Total			
- to 300			
301 - 600			
601 - 1,000			
1,001 - 2,000			
2,001 - 3,000			
3,001 - 4,000			
4,001 - 5,000			
5,001 and over			

Source:

Table 9 summarizes the current and future needs for nurses in industrial establishments.

Table 9. An estimate of the current and future number of nurses needed by industrial establishments in (State X).

Size of industrial establishment	Number of nurses needed	
	Current (Date)	Future (Date)
Total		
- to 300		
301 - 600		
601 - 1000		
1001 - 2000		
2001 - 3000		
3001 - 4000		
4001 - 5000		
5001 and over		

Source:

Offices and Private Practice

There are no known standards for determining the number of nursing personnel needed in offices and private practice.

Therefore, it is suggested that the present needs for nursing personnel in offices and private practice be held constant with the number of nursing personnel currently employed in these two categories.

Estimates of future needs for nursing personnel in offices should take into consideration the following factors:

1. inclination to utilize nursing personnel in offices;
2. an appreciable increase or decrease in the number of doctors, dentists, etc.;
3. trend in group practice.

The utilization of nursing personnel in offices in recent years may provide a clue to the extent of future requests for this type of nursing service. Information on the number of professional nurses in offices over a period of time can probably be obtained from the State Nurses' Association. This data can be secured by comparing the number of their members engaged in this type of nursing activity over a consecutive number of years. It may be possible to obtain similar information for non-professional nursing personnel from the State Board of Nurse Examiners (or the appropriate licensing agency). It will depend upon whether the licensure law in the State includes non-professional nursing personnel and if the registrants are requested to indicate the field of nursing in which they are engaged. The deans of medical, dental, etc. schools and the appropriate State associations (medical, dental, etc.) are the groups which will be helpful in estimating: an appreciable increase or decrease in the number of doctors, dentists, etc. (who may be potential employers of nursing personnel in offices); and the trend in group practice (which may influence the number of nursing personnel needed in offices).

Estimates of future needs for nursing personnel in private practice should recognize the difference between demand and need. Need is distinguished from demand in that it is a response to a real necessity arising from the patient's physical and mental condition rather than a desire for continuous individual care. The future need for the number of nursing personnel engaged in private practice in either homes or hospitals will probably be diminished as hospitals provide more adequate nursing service and are increasingly used. The preceding considerations may indicate the feasibility of maintaining the number of nursing personnel currently engaged in private practice constant for future needs.

The following table can be used to record estimates of current and future needs for nursing personnel in either offices or private practice.

Table 10. An estimate of the current and future number of nursing personnel needed in (offices or private practice) in (State X).

Type of nursing personnel	Number of nursing personnel needed	
	Current (Date)	Future (Date)
Total		
Professional nurses		
Non-professional nursing personnel		

Source:

Hospitals

As stated previously (see pages 17, 18), it is advantageous to estimate current and future needs for nursing personnel in hospitals according to the following types of hospitals:

1. General and allied special
2. Tuberculosis
3. Mental
4. Chronic

There are no known standards (pertinent to a study on a State-wide basis) by which to estimate needs for nursing personnel in special hospital departments such as the operating room, central supply room, outpatient department, etc. In the absence of such overall standards, the number of nursing personnel currently employed might be used as a criteria.

The index of "hours of care per patient per day" is the standard recommended as a guide in estimating the number of nursing personnel needed to give bedside care to patients in general, allied special, and chronic disease hospitals. The construction and arrangement of the hospitals, availability of desirable equipment, administrative skill of the executive personnel and other factors have a definite influence on the preceding standard. However, these factors cannot be included in the standard as there are no quantitative measures of their effect available.

An estimate of the number of nursing personnel needed in tuberculosis and mental hospitals will be more practicable if based on ratios of nursing personnel (professional and non-professional) per daily average patient census.

Whether hours of care per patient per 24 hours or ratios of nursing personnel per daily average patient census is used, estimates of future needs

for nursing personnel will be based on an estimated future daily average patient census. To estimate the future daily average patient census it will be necessary to know:

1. Anticipated number of hospital beds
2. Expected occupancy rate.

The State agency administering the Hospital Survey and Planning Program will probably be the best source for obtaining the anticipated number of hospital beds. The expected occupancy rate should be estimated in consultation with representatives of both State agency and the State Hospital Association.

When the anticipated number of hospital beds and the expected occupancy rate have been obtained, the following formula can be used to arrive at an estimated future daily average patient census.

Formula 4. Estimated future daily average patient census

Anticipated number of hospital beds	X	expected occupancy	=	estimated future daily average patient census.

Example:

25,000 anticipated number of hospital beds in State X in 1955	X	80% expected occupancy rate in hospitals in State X in 1955	=	20,000 estimated daily average patient census in State X in 1955.

General and Allied Special Hospitals

A recent study, Nursing Service in One Children's and Twenty-one General Hospitals, 1/ gives detailed information which is useful in computing nursing service needs for a single hospital. This publication presents nursing service needs for specific clinical areas according to type of accommodation. It is improbable that this information will be available on a State-wide basis. Therefore, the following criteria (adapted from this study) are suggested:

Administrative nursing personnel per daily average patient census (including newborn)

Type of administrative nursing personnel	Daily average patient census (including newborn)
1 day supervisor	57
1 evening supervisor	57
1 night supervisor	80
1 head nurse	19

Nursing personnel giving direct patient care

3.5 average number of bedside hours per patient during 24 hours; the proportion of professional nurses to non-professional nursing personnel giving this direct care to patients in the ratio -

2 professional nurses: 1 non-professional nursing personnel.

Distribution of Nursing Service during War 2/ suggests 2 nurses as the central administrative staff (exclusive of day supervisors and head nurses; and night supervisors) in a general hospital with an all-graduate staff and having a daily average of 100 patients.

1/ National League of Nursing Education, Department of Studies: A Study of Nursing Service in One Children's and Twenty-one General Hospitals. National League of Nursing Education, 1790 Broadway, New York City, New York, 1948.

2/ National Nursing Council for War Service: Distribution of Nursing Service during War, 1790 Broadway, New York City, New York, 1942.

A comparison of current practices with the preceding criteria may reveal a wide discrepancy between what actually exists and what is needed. If this is so, it may be considered feasible to gradually increase the average number of bedside hours per patient in 24 hours and the ratios of administrative nursing personnel per daily average patient census (including newborn) until the desired standards are met.

The status of current practices in general hospitals in the State can be revealed by collecting certain data from a selected number of representative hospitals. The following section discusses pertinent factors in such a study:

* * * * * * * * * * * * A Study of a Sample of General Hospitals * * * * * * * * * * * *

A sample of general hospitals in a State should include an adequate number of hospitals representing variations in:

1. size of community in which they are located
2. those with and without schools of nursing
3. ownership or control
4. average census (including newborn)

Information relative to the above items can be obtained from the most recent copy of Hospital Service In The United States (published annually by the Council on Medical Education and Hospitals). Utilization of information appearing in this publication for the purpose of a sample study of general hospitals in a State will involve the following steps:

1. Segregation of general "hospitals and sanatoriums" and "related institutions" from other categories listed under "type of service".
2. Classification of general "hospitals and sanatoriums" and "related institutions" according to:

a. Location.

The individual hospitals in the State are listed alphabetically according to location. The size of the population and the county immediately follow the location.

b. Those with schools of nursing.

The hospitals having schools of nursing accredited by the State Board of Nurse Examiners are designated by a symbol following the name of the individual hospital.

c. Ownership or control.

The various auspices under which the institutions are conducted are identified under the column "ownership or control".

d. Average census (including newborn).

The average census (excluding newborn) of the individual hospitals can be found under the column "average census". Since the figures in this column do <u>not</u> include newborn, it will be necessary to estimate the daily average newborn census. This can be approximated by multiplying the number of births (see column "number of births") by the most recent "average length of stay per patient in general hospitals" (refer to the table with this heading) and dividing by 365 (days in year).

Example:

$$\frac{100 \text{ number of births in Hospital A, a non-profit general hospital} \times 9 \text{ average length of stay per patient in all nonprofit general hospitals in 1947}}{365 \text{ days in year}} = 2.5 \text{ estimated daily average newborn census}$$

When the daily average newborn census has been estimated, this figure added to the average census (excluding newborn) will approximate the average census (including newborn).

The preceding method classifies the general hospitals in a State according to the four categories suggested as a basis for the sample study. The next consideration is the number of hospitals which will constitute a valid sample. This decision will depend upon the individual pattern of each State as revealed by the range and distribution of the hospitals within each category. It is recommended that statistical assistance be requested in making this determination.

Since the purpose of the sample study is to compare current practices with the suggested criteria, it is obvious that the data collected should correspond to the classifications of the criteria. Therefore, the specific information requested from each hospital participating in the sample study will relate to the following items for a specified 24 hour period:

1. Daily average patient census (including newborn)
2. Number of administrative nursing personnel on duty classified according to
   a. central administrative staff
   b. supervisors (day, evening, night)
   c. head nurses
3. Number of hours of direct patient care by type of nursing personnel
   a. professional nurses
   b. non-professional nursing personnel.

When the preceding data have been obtained, subsequent mathematical computations will reveal:

1. Current ratios of specific groups of administrative nursing personnel to daily average patient census (including newborn)
2. Current average number of bedside hours per patient in 24 hours, and the current ratio of professional to non-professional nursing personnel giving this direct care to patients.

The effectiveness of a sample depends upon accurate and complete information from the participating hospitals. Since a relatively small number of hospitals are selected for a project of this type, it is strongly recommended that the desired data be obtained through field visits. It may be expedient to have several nurses share the field work. If this is the case, it is advantageous to hold a conference with the group prior to their visits. Uniformity in the interpretation and collection of information will facilitate subsequent compilation and correlation of the material obtained.

If a mailed questionnaire is unavoidable, the information requested in the form should be clearly understood by the respondent. Questionnaire 4 (Parts 1 and 2) illustrates how the data needed for the sample study might be collected.

Questionnaire 4: Mailed questionnaire to individual hospitals selected to (Parts 1, 2) participate in a sample study of general hospitals to obtain:

Record of the number of administrative nursing personnel on duty.

Record of nursing personnel giving direct patient care during 24 hours.

Questionnaire 4
Part 1

To: (Name of group sponsoring survey)

Hospital _____

Address _____

Daily average patient census (including newborn) _____

Record of the number of administrative nursing personnel on duty

(Date: month, day, year)

Administrative nursing personnel	Number of nurses
I. Central administrative staff (director and assistant director of nurses and/or nursing school)	
II. Supervisors (Charge of more than one ward or patient unit)	
a. day.	
b. evening.	
c. night.	
III. Head nurses (Charge of one ward or patient unit only).	

Questionnaire 4
Part 2

To: (Name of group sponsoring survey)

Hospital _____

Address _____

Record of Nursing Personnel Giving Direct Patient Care During 24 Hours of (Date: month, day, year)

UNIT, e.g. WARD, FLOOR (1) Areas in which direct nursing service is given a/	SERVICE (2) e.g. med., surgical, OB, T.B., psychiatry	CENSUS (3) No. of patients in unit today	NURSING PERSONNEL GIVING DIRECT PATIENT CARE (Include full & part time)							
			(4) Private duty Nurses		(5) Graduate Professional Nurses b/		(6) Professional Student Nurses		(7) Non-Professional Nursing Personnel c/ giving direct care to patients	
			No.	Total Hours of Care	No.	Total Hours of Care	No.	Total Hours of Care	No.	Total Hours of Care
Example: B-2	Medical	20	6	48	2	16	2	6	3	24

a/Do not include special departments, e.g.: operating room, central supply room, out-patient department, etc.
b/Include any time given to direct patient care by head nurses and/or assistant head nurse.
c/Practical nurses, attendants, nurses' aides, orderlies, etc.

The following worksheets (to be used by the director of the survey or a designate) serve two purposes:

1. orderly method of compiling, computing, and correlating the collected data
2. systematic way of retaining essential data for reference.

The explanatory material accompanying each worksheet identifies the source of the information used, and illustrates the mathematical procedures involved by means of formulae and examples.

Worksheet 1. Summary of Data Relative to the Ratios of Administrative Nursing Personnel to Daily Average Patient Census (including newborn) in (Hospital A), on (Date: month, day, year)

(1) Specific groups of Administrative nursing personnel	(2) Number of administrative nursing personnel	(3) Daily average patient census (including newborn)	(4) Ratios of administrative nursing personnel to daily average patient census (including newborn)
Central Administrative staff	Example 2	200	1:100
Supervisor: Day			
Evening			
Night			
Head nurses			

Explanatory material, Worksheet 1.

This worksheet utilizes data obtained through Questionnaire 4 (part 1). The summarization in Worksheet 1 reveals ratios of administrative nursing personnel to daily average patient census (including newborn) in a hospital.

Formula 5 shows the mathematical procedures employed in Worksheet 1.

Formula 5. Ratios of administrative nursing personnel to daily average patient census (including newborn).

$$\frac{\text{Number of administrative nursing personnel: Central administrative nursing staff supervisors (day, evening, night) or head nurses.}}{\text{Daily average patient census (including newborn)}} = \text{Ratios of administrative nursing personnel to daily average patient census (including newborn).}$$

Example:

$$\frac{\text{2 number of Central administrative nursing staff in Hospital A}}{\text{200 daily average patient census in Hospital A (including newborn)}} = \text{1:100 ratio of central administrative nursing staff to daily average patient census (including newborn) in Hospital A.}$$

Note:

The data in Worksheet 1 pertains to a single hospital. To arrive at the average ratio for any one group of administrative nursing personnel for all hospitals participating in the sample study it will be necessary to:

1. individually total the specific groups of administrative nursing personnel:
   a. central administrative staff
   b. supervisors - day, evening, night
   c. head nurses
2. total the daily average patient census (including newborn).

When the preceding steps have been completed, the total number of individual groups of administrative nursing personnel divided by the total daily average patient census (including newborn) will reveal the average ratios of specific groups of administrative nursing personnel to daily average patient census (including newborn).

Example:

Statement of problem: To determine the average ratio of central administrative nursing staff to daily average patient census (including newborn) in the sample study of general hospitals in State X.

Individual institutions participating in the sample study of general hospitals	Number of central administrative nursing staff	Daily average patient census (including newborn)
Hospital A	2	200
Hospital B	8	950
Hospital C	1	50
Hospital D	3	300
Hospital E	2	100
	16	1600

Solution:

$$\frac{16 \text{ total number of central administrative nursing staff}}{1600 \text{ total daily average patient census (including newborn)}} = \text{1:100 average ratio of central administrative nursing staff to daily average patient census (including newborn).}$$

Worksheet 2. Summary of Data Relative to Hours of Bedside Care per Patient in 24 Hours and Ratio of Professional to Non-Professional Nursing Personnel Giving this Direct Patient Care in (Hospital A) on (Date: month, day, year)

(1) Adjusted Census	(2) Bedside Nursing Care in 24 Hours		(3) Hours of Bedside Care per Patient by Type of Nursing Personnel			(4) Ratio of Professional to Non-professional Nursing Personnel	
	Sum total Hours of Care	Average hours of care per patient	Graduate Professional	Professional student	Non-Professional nursing personnel	Professional (Graduate professional nurses and professional student nurses)	Non-Professional nursing personnel
Grand total							
Example: 18	46	2.5	.9	.3	1.3	1	1.1

Explanatory material, Worksheet 2.

This worksheet utilizes data obtained through Questionnaire 4 (Part 2). The summarization in Worksheet 2 reveals the hours of bedside care per patient in 24 hours and the ratio of professional to non-professional nursing personnel giving this direct patient care for each unit in a hospital.

The mathematical procedures in Worksheet 2 are the following:

a. ADJUSTED CENSUS

Source: Adjusted census (Column 1, Worksheet 2) is computed from census (Column 3, Part 2 of Questionnaire 4) and total hours of care of private duty nurses (Column 4, Part 2 of Questionnaire 4)

Formula 6a - Equivalent number of patients cared for by other than hospital staff in a 24 hour period.

$$\frac{\text{Total hours of service of private duty nurses}}{\text{24 hours}} = \text{equivalent number of patients cared for by other than hospital staff in a 24 hour period.}$$

Formula 6b - Adjusted census (patients cared for by hospital staff in a 24 hour period)

Census of Unit - Equivalent number of patients cared for by other than hospital staff in a 24 hour period = adjusted census (patients cared for by hospital staff in a 24 hour period)

Example:

$$\frac{\text{48 total hours of service of private duty nurses (6 nurses at 8 hours each)}}{\text{24 hours}} = \text{2 equivalent number of patients cared for by other than hospital staff in a 24 hour period}$$

20 (census of unit) - 2 (equivalent number of patients cared for by other than hospital staff in a 24 hour period) = 18 adjusted census (patients cared for by hospital staff in a 24 hour period)

b. AVERAGE HOURS OF BEDSIDE NURSING CARE PER PATIENT IN 24 HOURS

Source: The average hours of bedside nursing care per patient in 24 hours (Column 2, Worksheet 2) is computed for each unit (Column 1, Part 2 of Questionnaire 4) from the adjusted census (Column 1, Worksheet 2) and the sum total hours of bedside nursing care (Column 2, Worksheet 2). The sum total hours of bedside nursing care (Column 2, Worksheet 2) is the combined total hours of care of: graduate professional nurses (Column 5, Part 2 of Questionnaire 4); professional student nurses (Column 6, Part 2 of Questionnaire 4); and non-professional nursing personnel (Column 7, Part 2 of Questionnaire 4).

Formula 7. Average hours of nursing care per patient in 24 hours.

$$\frac{\text{Sum total of hours of bedside nursing care}}{\text{adjusted census}} = \text{average hours of nursing care per patient in 24 hours.}$$

Example:

16 total hours, graduate professional nurses

6 total hours, professional student nurses

24 total hours, non-professional nursing personnel

46 sum total of hours of bedside nursing care

$$\frac{46}{18 \text{ (adjusted census)}} = 2.5 \text{ average hours of nursing care per patient in a 24 hour period.}$$

c. HOURS OF BEDSIDE CARE PER PATIENT IN 24 HOURS BY TYPE OF NURSING PERSONNEL.

Source: Hours of bedside care per patient in 24 hours by type of nursing personnel (Column 3, Worksheet 2) is computed for each unit (Column 1, Part 2 of Questionnaire 4) from the adjusted census (Column 1, Worksheet 2) and the total hours of bedside nursing care of each category of nursing personnel: Graduate professional nurses (Column 5, Part 2 of Questionnaire 4); Professional student nurses (Column 6, Part 2 of Questionnaire 4); Non-professional nursing personnel (Column 7, Part 2 of Questionnaire 4).

Formula 8. Hours of bedside care per patient by type of nursing personnel.

Total hours of bedside nursing care:

$$\frac{\text{Graduate professional nurses}\ \underline{\text{or}}\ \text{Professional student nurses}\ \underline{\text{or}}\ \text{Non-professional nursing personnel}}{\text{Adjusted Census}} = \text{Hours of Bedside care per patient by type of nursing personnel}$$

Example:

$$\frac{\text{16 total hours, graduate professional nurses}}{\text{18 adjusted census}} = .9$$ Average hours of bedside care per patient by graduate professional nurses

$$\frac{\text{6 total hours, professional student nurses}}{\text{18 adjusted census}} = .3$$ Average hours of bedside care per patient by professional student nurses

$$\frac{\text{24 total hours, non-professional nursing personnel}}{\text{18 adjusted census}} = 1.3$$ Average hours of bedside care per patient by non-professional nursing personnel.

d. RATIO OF PROFESSIONAL TO NON-PROFESSIONAL NURSING PERSONNEL GIVING DIRECT PATIENT CARE

Source:

The ratio of professional to non-professional nursing personnel giving direct patient care (Column 4, Worksheet 2) is computed for each unit (Column 1, Part 2 of Questionnaire 4) from the total hours of care of graduate professional nurses (Column 5, Part 2 of Questionnaire 4) and professional student nurses (Column 6, Part 2 of Questionnaire 4) and non-professional nursing personnel (Column 7, Part 2 of Questionnaire 4).

Formula 9. Ratio of Professional to Non-Professional Nursing Personnel Giving Direct Patient Care.

$$\frac{\text{Total hours of bedside care by non-professional nursing personnel}}{\text{Total hours of bedside care by professional nurses (graduate professional and professional student nurses)}} = \text{ratio of professional to non-professional nursing personnel giving direct patient care.}$$

Example:

$$\frac{\text{24 total hours of bedside care by non-professional nursing personnel}}{\text{22 total hours of bedside care by professional nurses (graduate professional nurses 16; professional student nurses 6)}} = \text{1 professional nurse to 1.1 non-professional nursing personnel giving direct patient care.}$$

Worksheet 3. Summary of Data Relative to Hours of Bedside Care Per Patient in 24 Hours and Ratio of Professional to Non-Professional Nursing Personnel Giving this Direct Patient Care According to Size of Hospitals

(1) Size of Hospital	(2) Number of Hospitals	(3) Bedside Nursing Care in 24 Hours		(4) Hours of Bedside Care per Patient by Type of Nursing Personnel			(5) Ratio of professional to Non-professional nursing personnel	
		Sum total Hours of Care	Average Hours of Care per Patient	Graduate Professional	Professional Student	Non-Professional Nursing Personnel	Professional (graduate professional nurses and professional student nurses)	Non-Professional Nursing Personnel
Grand total								
Below 25								
26 - 50								
51 - 100								
101 - 200								
201 - 300								
301 and over								

Explanatory Material, Worksheet 3.

This worksheet classifies certain items compiled in Worksheet 2 according to size of hospitals. The selected data utilized in Worksheet 3 are: bedside nursing care in 24 hours (Column 2, Worksheet 2); hours of bedside care per patient by type of nursing personnel (Column 3, Worksheet 2); and ratio of professional to non-professional nursing personnel (Column 4, Worksheet 2).

The data from Worksheet 2 pertain only to a single hospital. Therefore, to utilize this data on Worksheet 3 two steps are necessary:

1. sort all Worksheets 2 according to size of hospital
2. summarize within each category of size the selected items on all Worksheets 2 to be used in Worksheet 3.

When this intermediate phase has been concluded, the results can then be entered in the appropriate columns in Worksheet 3. The calculations necessary to complete this worksheet are identical to those which have been discussed previously (refer to explanatory material accompanying Worksheet 2, sections b, c, d).

<u>Note</u>: Worksheet 3 can be used as a model for summarizing the other factors which served as a basis for selecting the general hospitals to participate in the sample study. This can be accomplished by changing the "size of hospital" (Column 1, Worksheet 3) to:

1. size of community in which the hospitals are located
2. hospitals with schools of nursing
3. hospitals without schools of nursing
4. ownership or control.

Summaries resulting from the preceding classification will not only permit more refined comparisons <u>within</u> each category, but may also disclose significant correlations <u>between</u> categories.

* *

When current practices (revealed by the sample study) have been compared with the suggested criteria and a decision reached relative to the standards which are to be used in estimating present and future needs for nursing personnel in general and allied special hospitals on a State-wide basis, Formulae 10 and 11 (a and b) will disclose the number of administrative and bedside nursing personnel required per day.

Formula 10. Number of administrative nursing personnel required per day to meet the selected standard of daily average patient census (including newborn) per type of administrative nursing personnel in general and allied special hospitals on a State-wide basis.

Daily average patient census (including newborn) in general and allied special hospitals	X	selected standards for administrative nursing personnel per daily average patient census (including newborn): Central administrative nursing staff or supervisors (day, evening, night) or head nurses	=	number of administrative nursing personnel required per day to meet the selected standard of daily average patient census (including newborn) per type of administrative nursing personnel in general and allied special hospitals on a State-wide basis

Example:

19,000 current daily average patient census (including newborn) of general and allied special hospitals in State X	X	2 central administrative nursing staff per 100 daily average patient census (including newborn)	=	380 central administrative nursing staff currently needed per day in general and allied special hospitals in State X to meet the selected standard of 2 central administrative nursing staff per 100 daily average patient census (including newborn)

Formula 11 a. Number of bedside nursing personnel required per day to meet the selected standard of average hours of bedside care per patient in 24 hours in general and allied special hospitals on a State-wide basis.1/

$$\frac{\text{Daily average patient census (including newborn) in general and allied special hospitals} \times \text{selected standard of average hours of bedside care per patient in 24 hours in general and allied special hospitals}}{\text{Average number of hours worked per day by nursing personnel giving bedside care in general and allied special hospitals.}} = \text{Number of bedside nursing personnel required per day to meet the selected standard of average hours of bedside care per patient in 24 hours in general and allied special hospitals on a State-wide basis.}$$

Formula 11 b. Number of professional or non-professional bedside nursing personnel required per day to meet the selected ratio of professional nurses or non-professional nursing personnel to total nursing personnel giving bedside care in general and allied special hospitals on a State-wide basis.

Number of bedside nursing personnel required per day to meet the selected standard of average hours of bedside care per patient in 24 hours in general and allied special hospitals on a State-wide basis X Selected ratio of professional nurses or non-professional nursing personnel to total nursing personnel giving bedside care in general and allied special hospitals on a State-wide basis = Number of professional or non-professional bedside nursing personnel required per day to meet the selected ratio of professional nurses or non-professional nursing personnel to total nursing personnel giving bedside care in general and allied special hospitals on a State-wide basis.

1/ This formula is adapted from an equation in the Manual of the Essentials of Good Hospital Nursing Service published by the American Hospital Association and National League of Nursing Education; 1790 Broadway, New York City, New York, 1942, page 43

Example:

Statement of problem:

20,571 - daily average patient census (including newborn) in general and allied special hospitals in State X

8 - average number of hours worked per day by nursing personnel giving bedside care in general and allied special hospitals in State X

Selected criteria for estimating needs for nursing personnel

3.5 average number of bedside hours per patient during 24 hours, the proportion of professional nurses to non-professional nursing personnel giving this direct care in the ratio of 2:1 (total nursing personnel 3, 2/3 professional nurses and 1/3 non-professional nursing personnel)

Solution:

$\frac{20{,}571 \times 3.5}{8}$ = 9000 number of nursing personnel required per day to meet the selected standard of 3.5 average hours of bedside care per patient in 24 hours in general and allied special hospitals in State X.

(8 average number of hours worked per day by nursing personnel giving bedside care)

9000 x 2/3 (factor for computing professional nurses) = 6000 professional nurses required per day to meet the selected ratio of professional to non-professional nursing personnel giving 3.5 average hours of bedside care per patient in 24 hours in general and allied special hospitals in State X.

9000 x 1/3 (factor for computing non-professional nursing personnel) = 3000 non-professional nursing personnel required per day to meet the selected ratio of professional to non-professional nursing personnel giving 3.5 average hours of bedside care per patient in 24 hours in general and allied special hospitals in State X.

Another factor which must be considered in estimates of need for nursing personnel in general hospitals is the contribution to nursing service made by student nurses in basic professional nursing education programs. It is suggested that this calculation be made in terms of replacement equivalents of professional nurses or non-professional nursing personnel. Formula 12 (a and b) illustrates a method of estimating these replacement equivalents.

Formula 12 a Number of nursing personnel required to replace the contribution made to nursing service by basic professional student nurses.

Total students currently enrolled	X	percent of students giving direct care to patients	X	percent of student service which is as productive as professional and non-professional nursing service	=	number of nursing personnel required to replace student nurse service.

Formula 12 b Number of graduate professional nurses or non-professional nursing personnel required to replace the contribution made to nursing service by basic professional student nurses.

Number of nursing personnel required to replace student nurse service	X	percent of student service which replaces: graduate professional nursing service or non-professional nursing service.	=	Number of graduate professional nurses or non-professional nursing personnel required to replace student nurse service.

Example:

Statement of problem:

3000 student nurses currently enrolled in basic professional nursing education programs associated with general hospitals in State X.

Assumptions:

1. 2/3 (66 2/3%) of the total students enrolled are giving direct care to patients.
2. An hour of student service is 3/4 (75%) as productive as a combined hour of professional and non-professional nurse service.
3. Student nurse service replaces
   a. Professional nursing service 60%
   b. Non-professional nursing service 40%.

Solution:

3000 students currently enrolled	X 66 2/3% (see 1 above)	X 75% (see 2 above)	=	1500, number of nursing personnel required to replace student nurse service
1500 number of nursing personnel required to replace student nurse service		X 60% (see 3 a above)	=	900, graduate professional nurses required to replace student nurse service
1500 number of nursing personnel required to replace student nurse service		X 40% (see 3b above)	=	600, non-professional nursing personnel required to replace nurse service.

If Formula 12 (a and b) is used as the method for estimating replacement equivalents for the contribution made by basic professional student nurses on a State-wide basis, it will be necessary to obtain an estimate for the following factors:

1. percent of the students currently enrolled who are giving direct care to patients
2. percent of student service which is as productive as a combined hour of professional and non-professional nurse service
3. percent of student service which replaces professional nursing service and non-professional nursing service.

Counsel in regard to the preceding items should be sought from the State Board of Nurse Examiners, State Nurses' Association, and State League of Nursing Education.

The following table may be used to summarize the number of nursing personnel currently needed per day by general and allied special hospitals.

Table 11. An estimate of the number of nursing personnel currently needed per day by (registered and unregistered or registered only) general and allied special hospitals (exclusive of or including Federal hospitals) in (State X), (Date).

Type of Nursing personnel	Number of nursing personnel currently needed per day
Total	
Professional nurses	
Central administrative staff	
Supervisors	
Head nurses	
Staff nurses	
Non-professional nursing personnel	

Source:

Tuberculosis Hospitals

The following ratios of nurses per patients (based on three major classifications of patient activity) are cited in Minimal Medical and Administrative Standards for Tuberculosis Hospitals and Sanatoria 1/:

infirmary patients: 1 nurse per 3 patients

semi-ambulant patients: 1 nurse per 8 patients

ambulant patients: 1 nurse per 30 patients

The preceding source does not indicate the number of professional and non-professional nursing personnel which constitute the above ratios. For the purpose of a State-wide survey, the following ratios (or a variation) might be assumed:

Type of Patient Activity	Professional Nurses	Non-Professional Nursing Personnel
infirmary	1	2
semi-ambulant	1	3
ambulant	1	5

1/ American Trudeau Society, Committee on Sanatorium Standards: Minimal Medical and Administrative Standards for Tuberculosis Hospitals and Sanatoria. American Review of Tuberculosis Ll, No. 5 (May 1945) page 485.

Example:

Statement of problem:

3000 daily average patient census in registered tuberculosis hospital in State X, 1949

300 estimated daily average census of infirmary patients

1200 estimated daily average census of semi-ambulant patients

1500 estimated daily average census of ambulant patients

Selected criteria for estimating needs for nursing personnel

Infirmary patients

1 nurse per 3 patients, ratio of professional nurses to non-professional nursing personnel 1:2

Semi-ambulant patients

1 nurse per 8 patients, ratio of professional to non-professional nursing personnel 1:3

Ambulant patients

1 nurse per 30 patients, ratio of professional nurses to non-professional nursing personnel 1:5

Solution:

Infirmary patients

300 infirmary patients require 100 nurses at the ratio of 1 nurse per 3 patients; on the assumption of 1 professional nurse to 2 non-professional nursing personnel these 100 nurses will consist of:

33 professional nurses (1/3 x 100)

67 non-professional nursing personnel (2/3 x 100)

Semi-ambulant patients

1200 semi-ambulant patients require 150 nurses at the ratio of 1 nurse per 8 patients; on the assumption of 1 professional nurse to 3 non-professional nursing personnel these 150 nurses will consist of:

37 professional nurse (1/4 x 150)
113 non-professional nursing personnel (3/4 x 150).

Ambulant patients

1500 ambulant patients require 50 nurses at the ratio of 1 nurse per 30 patients; on the assumption of 1 professional nurse to 5 non-professional nursing personnel these 50 nurses will consist of:

8 professional nurses (1/6 x 50)
42 non-professional nursing personnel (5/6 x 50).

Since the ratios of nurses per patients are based on three major classifications of patient activity, it will be necessary to estimate the number of hospitalized tuberculosis patients in the State according to: infirmary; semi-ambulant; and ambulant. A conference with the State administrative agency responsible for the supervision of State tuberculosis sanatoria should provide a logical basis for this supposition.

Table 12 presents a method of compiling an estimate of the number of nursing personnel currently needed per day by tuberculosis hospitals.

Table 12. An estimate of the number of nursing personnel currently needed per day by (registered and unregistered or registered only) tuberculosis hospitals (exclusive of or including Federal hospitals) in (State X), (Date).

Classification of patients in tuberculosis hospitals according to activity	Number of nursing personnel currently needed per day	
	Professional	Non-professional
Total		
Infirmary		
Semi-ambulant		
Ambulant		

Source:

Mental Hospitals

A minimum standard for nursing personnel in mental hospitals (based on Standard for Psychiatric Hospitals and Out-Patient Clinics Approved by the American Psychiatric Association 1/ is:

1 professional nurse per 25 patients

1 non-professional nursing personnel per 4 patients.

If the preceding standard is considered inadequate, the need for nursing personnel might be estimated on the basis of the number of psychiatric patients who require:

1. intensive therapeutic care
2. custodial care.

The number of nursing personnel needed for psychiatric patients who require intensive therapeutic care can be computed in terms of hours of bedside care. In this respect, it would seem reasonable to use the same criteria (average hours of bedside care per patient in 24 hours, and ratio of professional to non-professional nursing personnel), which have been selected as standards for general and allied special hospitals on a State-wide basis. The number of nursing personnel needed for psychiatric patients requiring custodial care can be computed by using the minimum standard (ratios of nursing personnel to patients) suggested in the preceding paragraph.

1/ Committee on Psychiatric Standards and Policies: Standards for psychiatric hospitals and out-patient clinics approved by the American Psychiatric Association 1945 - 1946. American Journal of Psychiatry 102:264 - 269 (September 1945)

Example:

Statement of problem:

3086 daily average patient census in registered mental hospitals in State X, 1949.

686 estimated daily average census of patients requiring intensive therapeutic care.

2400 estimated daily average census of patients requiring custodial care.

8 average number of hours worked per day by nursing personnel giving bedside care in mental hospitals in State X.

Selected criteria for estimating needs for nursing personnel

Patients requiring intensive therapeutic care.

3.5 average number of bedside hours per patient during 24 hours, the proportion of professional nurses to non-professional nursing personnel giving this direct care in the ratio of 2:1 (total nursing personnel 3, 2/3 professional nurses and 1/3 non-professional nursing personnel).

Patients requiring custodial care.

1 professional nurse per 25 patients.

1 non-professional nursing personnel per 4 patients.

Solution

Patients requiring intensive therapeutic care.

686 patients require 300 nursing personnel per day to provide 3.5 average hours of bedside care per patient in 24 hours; on the basis of 1 professional nurse to 2 non-professional nursing personnel the 300 nursing personnel will consist of:

100 professional nurses.

200 non-professional nursing personnel.

$$\frac{686 \text{ estimated daily average patient census} \times 3.5 \text{ average number of bedside hours per patient in 24 hours}}{8 \text{ average number of hours worked per day by nursing personnel giving bedside care}} = 300 \text{ number of nursing personnel required per day to provide 3.5 average hours of bedside care per patient in 24 hours.}$$

$300 \times 2/3$ factor for computing professional nurses = 200 professionel nurses required per day to provide 3.5 average hours of bedside care per patient in 24 hours.

$300 \times 1/3$ factor for computing non-professional nursing personnel = 100 non-professional nursing personnel required per day to provide 3.5 average hours of bedside care per patient in 24 hours.

Patients requiring custodial care

2400 patients require 696 nursing personnel per day to meet the minimum standard of 1 professional nurse per 25 patients and 1 non-professional nursing personnel per 4 patients; on the basis of the preceding ratios the 696 nursing personnel will consist of:

96 professional nurses ($2400 \div 25$)

600 non-professional nursing personnel ($2400 \div 4$)

If the need for nursing personnel is based on the number of psychiatric patients who require intensive therapeutic or custodial care, it will be necessary to estimate the respective number of patients in the State in these two categories. The State Mental Health Authority will probably be the best source to obtain assistance in making this estimate.

The following table illustrates one way by which the estimate of the number of nursing personnel currently needed per day by mental hospitals can be assembled.

Table 13. An estimate of the number of nursing personnel currently needed per day by (registered and unregistered or registered only) mental hospitals (exclusive of or including Federal hospitals) in (State X), (Date).

Classification of patients in mental hospitals according to type of care required.	Number of nursing personnel currently needed per day	
	Professional	Non-Professional
Total		
Intensive therapeutic		
Custodial		

Source:

Chronic Hospitals

There are no firmly established standards for computing the number of nursing personnel needed to provide adequate nursing care to patients in chronic hospitals. The following assumed criteria are suggested for consideration:

1.5 average number of bedside hours per patient during 24 hours; the proportion of professional nurses to non-professional nursing personnel giving this direct care in the ratio -

1 professional nurse: 5 non-professional nursing personnel.

Example:

Statement of problem:

500 daily average patient census in registered chronic hospitals in State X, 1949.

8 average number of hours worked per day by nursing personnel giving bedside care in chronic hospitals in State X.

Selected criteria for estimating needs for nursing personnel.

1.5 average number of bedside hours per patient during 24 hours, the proportion of professional nurse to non-professional nursing personnel giving this direct care in the ratio of 1:5 (total nursing personnel 6, 1/6 professional nurses and 5/6 non-professional nursing personnel).

Solution:

$$\frac{\text{500 daily average patient census} \times \text{1.5 average number of bedside hours per patient in 24 hours}}{\text{8 average number of hours worked per day by nursing personnel giving bedside care}} = \text{94 number of nursing personnel required per day to provide 1.5 average hours of bedside care per patient in 24 hours}$$

94 x 1/6 factor for computing professional nurses = 16 professional nurses required per day to provide 1.5 average hours of bedside care per patient in 24 hours

94 x 5/6 factor for computing non-professional nursing personnel = 78 non-professional nursing personnel required per day to provide 1.5 average hours of bedside care per patient in 24 hours.

Table 14 may be used to record the estimates of the number of professional nurses and non-professional nursing personnel currently needed per day by chronic hospitals.

Table 14. An estimate of the number of nursing personnel currently needed per day by (registered and unregistered or registered only) chronic hospitals (exclusive of or including Federal hospitals) in (State X), (date).

Daily average patient census in chronic hospitals	Number of nursing personnel currently needed per day	
	Professional	Non-professional

Source:

Total number of nursing personnel needed in hospitals

Estimates of the number of professional and non-professional nursing personnel required to meet a selected standard of nursing care in hospitals have been based on the number needed per day. It is necessary to compute the total number needed to include the additional number required to supplement those away from duty for the following reasons:

1. Vacation, holidays, and illness
2. Days off each week.

When the preceding factors are used in relation to current needs they should reflect average current practices. If some of these practices are not considered adequate, estimates of future needs should envisage progress in deficient personnel practices.

The State Nurses' Association, State Hospital Association, and an agency representing pre-payment hospital plans should be consulted in estimating the current average days away from duty each year of every member of the nursing personnel in hospitals.

Formula 13 shows how the total number of nursing personnel needed in hospitals can be computed.

Formula 13. Total number of Nursing Personnel needed in hospitals.

$$\frac{\text{365 days in year}}{\text{average number of days worked per year by each member of the nursing personnel in hospitals}} \times \text{number of nursing personnel required per day to meet selected standards of nursing care in hospitals for 24 hours.} = \text{total number of nursing personnel needed in hospitals.}$$

Example:

Statement of problem

5300 - number of nursing personnel required to meet the selected standards of nursing care per day in hospitals in State X in 1949.

100 - average days away from duty each year of every member of the nursing personnel for vacation, holidays, illness, and days off each week.

28 days (4 weeks) away from duty because of vacations, holidays, illness.

72 days away from duty because of days off each week

52 weeks in year

- 4 weeks away from duty for vacation, holidays, illness

48 weeks on duty

48 x 1½ days off = 72

265 average number of days worked per year by each member of the nursing personnel in hospitals

365 days in year

- 100 average days away from duty each year for vacations, holidays, and days off each week

265

Solution:

$$\frac{365}{265} \times 5300 = 7300$$ total number of nursing personnel needed in hospitals in State X in 1949.

Summary: Estimated total number of nursing personnel needed by hospitals.

Table 15 summarizes the estimates of the total number of nursing personnel currently needed by hospitals.

Table 15. An estimate of the total number of nursing personnel currently needed by (registered and unregistered or registered only) hospitals (exclusive of or including Federal hospitals) in (State X), (Date).

Type of hospital	Daily average patient census	Number of nursing personnel needed	
		Professional	Non-professional
Total			
General and allied special. .			
Tuberculosis.			
Mental.			
Chronic			

Source:

Table 16 summarizes the estimates of the total number of nursing personnel needed by hospitals in the future.

Table 16. An estimate of the total number of nursing personnel needed in the future by hospitals (exclusive of or including Federal hospitals) in (State X), (future date).

Type of beds	Anticipated daily average patient census	Number of nursing personnel needed	
		Professional	Non-Professional
Total			
General and allied special. .			
Tuberculosis.			
Mental.			
Chronic			

Source:

Summary: SECTION II

Table 17 summarizes the estimates of the current and future number of nursing personnel needed by the State according to place of service (see Tables 7, 9, 10, 15, 16)

Table 17. An estimate of the number of nursing personnel required to meet current (date) and future (date) needs in (State X).

Place of service	Number of nursing personnel needed			
	Current need (date)		Future need (date)	
	Professional	Non-Prof.	Professional	Non-Prof.
Total				
Public Health				
Industry				
Offices				
Private practice.				
Hospitals 1/.				

1/ Registered and unregistered or registered only; exclusive of or including Federal hospitals

Source:

An estimate of the current deficits of nursing personnel in the State is revealed in Table 18 when the number of nursing personnel currently needed (Table 17) is matched with the number of nursing personnel currently employed (Table 6).

Table 18. An estimate of the current deficits of nursing personnel in (State X), (Date)

Place of Service	Number of nursing personnel					
	Currently needed		Currently employed		Current 1/ deficit	
	Prof.	Non-prof.	Prof.	Non-prof.	Prof.	Non-prof.
Total						
Public Health						
Industry						
Offices						
Private practice						
Hospitals 2/						

1/ Currently needed - currently employed = current deficit

2/ Registered and unregistered or registered only; exclusive of or including Federal hospitals.

Source:

The following chart is a condensation of the discussion in SECTION II relative to suggested criteria and probable sources for obtaining essential information for estimating the number of nursing personnel required to meet current and future needs on a State-wide basis.

Chart 2. Suggested criteria and probable sources for obtaining essential information for estimating the number of nursing personnel required to meet current and future needs on a State-wide basis.

Place of Service	Suggested Criteria	Probable sources of essential information
Public Health	1 public health nurse per 2000 or 5000 population 1 supervisor for every 10 public health nurses	Most recent copy of "Current Population Reports" relative to the current population of the State. State Planning Commission (or its counterpart) relative to an estimate of the projected population of the State as of a future date. Directors of nursing of the public health agencies in the State relative to: 1. overlapping of nursing activities 2. geographical coverage 3. amount of bedside care given 4. demand for care of chronically ill patients 5. use of non-professional nursing personnel 6. vacancies in budgeted positions
Industry	1 nurse....up to 300 employees 2 or more nurses .. up to 600 employees 3 or more nurses .. up to 1000 employees 1 nurse per each additional 1000 employees up to 5000; and 1 nurse per additional 2000 employees.	State Industrial Hygiene Personnel; State Chamber of Commerce; Manufacturers' Association; State Planning Commission (or its counterpart) relative to: 1. minimum size of an industrial establishment to be included in the category "up to 300 employees". 2. present number of plants and employees according to size of industrial establishment.

		3. extent of medical and health programs 4. accident frequency 5. number of additional shifts 6. amount of nursing participation in health education and home nursing service 7. utilization of part-time nursing services in industrial establishments employing less than 100 workers 8. tendency to employ non-professional nursing personnel 9. extent of supervision of nurses by nurses 10. plans for industrial expansion 11. social and economic trends in the State 12. possible technological advances in the major types of industry represented.
Offices	current need held constant with the number of nursing personnel currently employed. future need dependent upon the consideration of the following factors in the State: 1. inclination to utilize nursing personnel in offices 2. an appreciable increase or decrease in the number of doctors, dentists, etc. 3. trend in group practice.	State Nurses' Association relative to the number of their members engaged in office nursing over a consecutive number of years. State Board of Nurse Examiners (or appropriate licensing agency) relative to the number of non-professional nursing personnel employed in offices over a consecutive number of years. Deans of medical, dental, etc. schools; State Medical, Dental, etc. Associations relative to an estimate of: 1. an appreciable increase or decrease in the number of doctors, dentists, etc. (who may be potential employers of nursing personnel in offices) 2. trend in group practice (which may influence the number of nursing personnel needed in offices).

Private practice	current and future need held constant with the number of nursing personnel currently employed	
Hospitals	Nursing personnel in special hospital departments (operating room, central supply, out-patient department, etc.) held constant with the number of nursing personnel currently employed.	State Agency Administering the Hospital Survey and Planning Program relative to the anticipated number of hospital beds in the following categories: 1. General and allied special 2. Tuberculosis 3. Mental 4. Chronic State Agency Administering the Hospital Survey and Planning Program; State Hospital Association relative to an estimate of the expected occupancy rate as of a future date. State Nurses' Association; State Hospital Association; Agency representing prepayment hospital plans relative to an estimate of the average days away from duty each year of every member of the nursing personnel for vacation, holidays, illness, and days off each week.
General and allied special Hospitals	Central Administrative nursing personnel: Type of administrative nursing personnel — Daily average patient census (including newborn) 2 central administrative staff . . . . .100 1 day supervisor . . . . . 57 1 evening supervisor . . . . . 57 1 night supervisor . . . . . 80 1 head nurse 19	Most recent copy of "Hospital Service in The United States" relative to: 1. Classification of general hospitals in the State according to a. size of the community in which they are located b. those with and without schools c. ownership or control d. average census (including newborn)

	Nursing personnel giving direct patient care: 3.5 average number of bedside hours per patient during 24 hours; the proportion of professional nurses to non-professional nursing personnel giving this direct care in the ratio - 2 professional nurse: 1 non-professional nursing personnel	State Board of Nurse Examiners; State Nurses' Association; State League of Nursing Education relative to an estimate of the: 1. percent of basic professional student nurses currently enrolled who are giving direct care to patients. 2. percent of basic professional student service which is as productive as a combined hour of professional and non-professional nurse service. 3. percent of basic professional student service which replaces professional nursing service and non-professional nursing service.
Tuberculosis Hospitals	Type of patient activity / Number of patients per 1 nurse / Ratio of professional nurses to non-professional nursing personnel infirmary -- 3 ---- 1:2 semi-ambulant 8 --- 1:3 ambulant ---- 30 --- 1:5	State Administrative Agency responsible for the supervision of State tuberculosis sanatoria relative to an estimate of the number of hospitalized tuberculosis patients in the State according to the classification of patient activity: 1. infirmary 2. semi-ambulant 3. ambulant

Mental Hospitals	1 professional nurse per 25 patients 1 non-professional nursing personnel per 4 patients or patients requiring intensive therapeutic care - 3.5 average number of bedside hours per patient during 24 hours; the proportion of professional nurses to non-professional nursing personnel giving this direct care in the ratio - 2 professional nurses: 1 non-professional nursing personnel patients requiring custodial care 1 professional nurse per 25 patients 1 non-professional nursing personnel per 4 patients	State Mental Health Authority relative to an estimate of the number of patients in mental hospitals in the State who require: 1. intensive therapeutic care 2. custodial care.
Chronic Hospitals	1.5 average number of bedside hours per patient during 24 hours; the proportion of professional nurses to non-professional nursing personnel giving this direct patient care in the ratio 1 professional nurse: 5 non-professional nursing personnel	

SECTION III. PLANNING TO MEET THE NEEDS FOR NURSING PERSONNEL

Both quality and quantity must be considered in planning to meet the needs for nursing personnel. The present system of nursing education in the State first must be examined both quantitatively and qualitatively. For the purpose of the present study, it is suggested that this analysis should include:

1. Nursing education programs for professional nurses

   a. Basic professional

      (Diploma and/or degree programs for undergraduate student nurses)

   b. Advanced professional

      (Programs for graduate nurses leading to a degree. Supplementary work to strengthen inadequate basic programs in nursing is not included.)

2. Training programs for non-professional nursing personnel

   (Approved training programs for non-professional nursing personnel. Inservice training programs are not included.)

An analysis of the existing pattern of nursing education will be evaluated to determine its adequacy in meeting present needs and also to guide policies regarding adjustments to be made to meet future needs. This evaluation may indicate the advisability of reviewing the entire structural plan for higher nursing education in the State.

Consideration should also be given to the coordinated hospital system envisaged in the State hospital plan. This design has implications for the distribution and location of nursing education facilities.

Another factor which has an influence on the adequacy of the present system of nursing education is the number of nurses presently employed in positions for which they lack preparation. It is necessary to ascertain the extent of this deficiency so that plans can be made to improve the situation.

Experience in nursing as well as educational preparation contributes to effective nursing practice. However, in the absence of standards by which to evaluate nursing experience, it is suggested that educational qualifications serve as the major basis for judgment. The following section will discuss sources and methods for obtaining data pertinent to educational qualifications of nursing personnel currently employed and suggest tables for compiling the acquired material.

Educational Qualifications of Nursing Personnel Currently Employed

The annual census of public health nurses contains information relative to the educational qualifications of professional nurses currently employed by public health agencies. Table 19 illustrates a method of compiling this information.

Table 19 -- Educational qualifications of full time nurses employed by public health agencies in (State X), (Date).

Educational qualifications	Full time nurses					
	Total		Supervisors		Staff	
	Number	Percent	Number	Percent	Number	Percent
			General education			
Total						
Less than high school graduation						
High school but no college degree						
One or more collegiate degree.						
			Public Health program of study			
Total						
None						
Less than one academic year.						
One or more academic years.						

Source:

The yearly census of industrial nurses includes information relative to general education and post-graduate professional education for registered nurses (supervisors and staff) employed full time by industry. Utilization of this material involves a recognition of the following factors:

1. Both general education and post-graduate professional education are recorded only for those for whom data are known.
2. Post-graduate professional education of those for whom data are known states that the total nurses are included in one or more of the following subdivisions:

   clinical courses

   industrial hygiene courses

   public health program of study.

Table 20 shows how this material might be compiled.

Table 20 -- Educational qualifications of full time registered nurses employed by industry in (State X), (Date)

Educational qualifications	Full time registered nurses					
	Total		Supervisors		Staff	
	Number	Percent	Number	Percent	Number	Percent
General Education						
Total						
Less than high school graduation						
High school graduation only						
Some college						
One or more academic degrees						
Post-graduate professional education						
Total						
Clinical courses						
less than 1 month						
more than 1 month but less than 3 months						
3 months or more						
Industrial hygiene courses						
without credit						
with credit						
less than 1 full-time academic year						
one or more full-time academic years						
Public Health Program of study						
less than 1 full-time academic year						
one or more full-time academic years						

Source:

The State Board of Nurse Examiners will probably have information pertinent to the educational qualifications of instructional personnel in approved basic schools of nursing and training programs for non-professional nursing personnel. The arrangement of this data in a table will of course depend upon the specific categories of educational qualifications for which the information was collected.

Existing data relative to the educational qualifications of graduate professional nurses (acquired from the preceding sources) may be considered inadequate. If the collection of additional information is contemplated, the following questionnaire (designed to be mailed to individual hospitals to obtain the educational qualifications of professional and non-professional nursing personnel) might be considered as a pattern.

Questionnaire 5: (Parts 1, 2)

Mailed questionnaire to individual hospitals to obtain a record of the educational qualifications of:

graduate professional nurses currently employed

non-professional nursing personnel currently employed.

To: (Name of Group sponsoring survey)

Questionnaire 5
Part 1

Hospital _____

Address _____

Record of the educational qualifications of graduate professional nurses currently employed 1/ (Date: Month, day, year)

Position	Number of graduate professional nurses	Distribution by educational qualifications						
		General education 2/				Professional preparation beyond basic course		
(1)	(2)	(3) Less than high school	(4) High school only	(5) Some College No Degree	(6) One or more academic degrees	(7) None	(8) Less than one academic year	(9) One or more academic years
Total								
Director and assistant director of nurses and/or nursing school								
Instructors								
Supervisors and assistant supervisors (charge of more than one ward unit)								
Head nurses and assistant head nurses (charge of one ward unit only								
Staff nurses								

1/ Include: a. part time and full time graduate professional nurses
b. graduate professional nurses on afternoon and night duty as well as those off duty because of days off, vacation, or illness.

2/ Record only the highest level in general education (Columns 3 to 6) for each graduate professional nurse.

Questionnaire 5
Part 2

To: (Name of group sponsoring survey)

Hospital _____

Address _____

Record of the educational qualifications of non-professional nursing personnel currently employed 1/ (Date: Month, day, year)

Position	Number of non-professional nursing personnel	Distribution by Educational Qualification					
		General Education 2/				Training	
		Less than eighth grade	Completed eighth grade only	Some high school	Graduated from high school	On the job training only	Graduated from an approved school for practical nurses
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-professional nursing personnel; practical nurses, attendants, etc. (those who spend the major part of their time assisting with nursing duties)							

1/ Include: a. part-time and full-time non-professional nursing personnel
b. non-professional nursing personnel on afternoon and night duty as well as those off duty because of days off, vacation or illness.

2/ Record only the highest level in general education (columns 3-6) for each non-professional nursing personnel.

If Questionnaire 5 (or a variation) is used, Tables 21 and 22 are suggested as guides for assembling the collected information.

Table 21. Educational qualifications of graduate professional nurses employed by (registered and unregistered or registered only) hospitals (exclusive of or including Federal hospitals) in (State X), (Date).

Educational Qualifications	Professional nursing personnel											
	Total		Director (and assistants) of nurses and/or nursing school		Instructors		Supervisors (and assistants)		Head nurses (and assistants)		Staff nurses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total					General Education							
Less than high school												
High school only												
Some college; no degree												
One or more academic degrees												
					Professional preparation beyond basic course							
Total												
None												
Less than one academic year												
One or more academic years												

Source:

Table 22. Educational qualifications of non-professional nursing personnel employed by (registered and unregistered or registered only) hospitals (exclusive of or including Federal hospitals) in (State X), (date).

Educational qualifications	Non-professional nursing personnel	
	Number	Percent
General education		
Total		
Less than eighth grade		
Completed eighth grade only		
Some high school		
Graduated from high school		
Training		
Total		
On-the-job training only		
Graduated from an approved school for practical nurses		

Source:

It is highly desirable that the appraisal of the system of nursing education in the State be based on an individual assessment of each program. If such a detailed review is not possible, there are certain gross measures applicable to the total nursing education system which have qualitative inferences. Conclusions reached through this less refined method will not be sufficient as a basis for a thorough revision of the existing pattern of nursing education.

If the results of an overall evaluation indicate the necessity of making drastic and extensive changes, plans should be made for a comprehensive and detailed review of the theory and practice of each program of study.

The following section emphasizes considerations pertinent to an overall gross evaluation of the present system of nursing education. Reference is made, however, to published material which will be useful as a guide if a detailed review is contemplated.

Basic Professional Programs (Diploma and/or Degree Programs for Undergraduate Student Nurses)

The State Board of Nurse Examiners is the best source for obtaining data relative to the basic professional schools of nursing. If it is expedient to compare selected items in basic schools in the State with other States, Facts About Nursing 1/ State Accredited Schools of Nursing 2/, and Some Qualitative and Quantitative Factors in Nurse Education 3/ should be utilized. The National League of Nursing Education (1790 Broadway, New York City, N.Y.) may have material (compiled in recent national studies), which is available for use by a State.

As stated previously, quality is difficult to appraise without an individual assessment of each program. However, a gross evaluation based on answers to the following questions will give some indication of the effectiveness of the basic professional schools in producing the quality of professional nurses needed.

1/ American Nurses' Association: Facts About Nursing. 1790 Broadway, New York 19, New York.

2/ National League of Nursing Education, Department of Studies: State Accredited Schools of Nursing. National League of Nursing Education, New York, 1946.

3/ Vreeland, Ellwynne M.: Some Qualitative and Quantitative Factors in Nurse Education. Public Health Reports, Vol. 63, No. 52. U. S. Government Printing Office, Washington, D.C., 1948.

1. Are there sufficient opportunities for able potential students from all groups to enroll in schools of nursing?

> "We recommend that nurses everywhere seek to recruit students and personnel without regard to sex, marital status, economical background, or ethnic, racial, and religious origins. We recommend particularly that positive steps be taken by the profession to create an atmosphere conducive to attracting carefully selected representatives of a true cross-section of the population to nursing".1/

2. What percent of the schools are accredited by:

   a. State Board of Nurse Examiners?

   b. National Nursing Accrediting Service?

3. How many of the schools have been accredited as graduating nurses eligible for staff positions in Public Health nursing agencies?

4. How many of the collegiate schools providing degree programs for undergraduate nurses are recognized by the Association of Collegiate Schools of Nursing as being:

   a. Active members?

   b. Associate members?

"We recommend that nursing make one of its first matters of important business the long overdue official examination of every school; that the list of accredited schools be published and distributed as far as possible to every town and city of the United States as an avowed substitute (except legally) for the inadequate lists of schools accredited by State boards of nurse examiners; that an unequivocal statement be included in the published document to the effect that any school not named had failed to meet minimum requirements for accreditation or had refused to permit examination; that a Nation-wide educational campaign be conducted for the purpose of rallying broad public support for accredited schools and for subjecting slow moving State boards and non-accredited schools to strong social pressure.

1/ Brown, Esther L.: Nursing For The Future. Russell Sage Foundation, New York, 1948, page 197.

"We recommend, further, that provision be made for periodic re-examination of all schools listed or others requesting it, as well as for first examination of new schools, and for publication and distribution of the revised lists." 1/

"Its requirements (Association of Collegiate Schools of Nursing) ... are so reasonable, however, that any school established on a base that educators generally consider sound would have little difficulty in securing membership ---

"Under such circumstances the task of the future is decisive. It is to strengthen further schools that hold or are eligible for membership in the Association of Collegiate Schools of Nursing; to reconsider whether schools that are unlikely to be able to meet some such reasonable standards within the next few years should continue; and to establish new professional schools where surveys indicate they are most needed, would receive substantial financial support, and would attract sufficiently large student bodies". 2/

5. What percent of the hospitals associated with schools of nursing are approved by:

   a. Council on Medical Education and Hospitals for:

      internships?

      residencies?

      both internships and residencies?

      neither internships or residencies?

   b. American College of Surgeons?

      The quality of medical care determined through approval by appropriate agencies gives some indication of the opportunities provided in the clinical facilities used by the schools which may contribute to breadth of nursing knowledge and technical competence.

6. How many of the schools are controlled by:
   What proportion of the total student enrollment is in:

   a. Colleges or universities?

   b. Hospitals with a daily average patient census of 150 or more?

   c. Hospitals with a daily average patient census of less than 150?

1/ Brown, Esther L.: Nursing For The Future. Russell Sage Foundation, New York, 1948, page 116.
2/ Ibid., page 177 ff. (Writer's parenthetical insert)

7. What percent of the students have planned experience in:

   a. Nursery school?

   b. Psychiatry?

   c. Tuberculosis?

   d. Other communicable disease?

   e. Outpatient department?

   f. Community health?

8. How many of the students have experience in a:

   a. Large medical center?

   b. Small rural hospital?

"Nursing schools should be operated as far as possible by colleges and large hospitals (with an average daily census of at least 150 patients), which should develop affiliations with other general and special hospitals serving contiguous areas (including tuberculosis sanatoria and hospitals for nervous and mental diseases and contagious illness) and with public health agencies in both rural and urban communities". 1/

"In the light of current needs for graduate bedside nurses and current opportunities for their education, we recommend that those hospital schools here designated as relatively good make concerted effort through various types of experimentation to increase their vitality and social usefulness and to point the way to an ultimate solution of the 'hospital school problem'." 2/

"We recommend not only that there be expressed conviction that provision should be made within the university for the continuing undiminished contribution of distinguished hospital schools; but that they be given wholehearted assistance in achieving this reorganization by the entire nursing profession, medical and hospital associations concerned with nursing, university and hospital administrator, university faculties, administrators and faculties of schools of medicine and public health, foundations, and those members of the laity influential in effecting policy and influencing public opinion". 3/

1/ The Commission on Hospital Care: Hospital Care in the United States. Commonwealth Fund, New York, 1947, page 87.

2/ Brown, Esther L.: Nursing For The Future, Russell Sage Foundation, New York, 1948, page 127.

3/ Ibid, p. 132

"To improve hospital service along its three major fronts - preventive, diagnostic, therapeutic, all States are now developing their 'coordinated hospital system'. Such a plan proposes tying all hospitals into a cooperative hook-up, in which there would be constant exchange of information, training, consultation service and personnel, and in which patients would be referred from one hospital to another." 1/

9. How many schools are operated by the following types of specialized hospitals:

   a. Mental?

   b. Tuberculosis?

   c. Children's?

   "The question . . . should be raised of whether the future function of these particular hospitals (mental, tuberculosis, children's) does not lie entirely in providing affiliation, rather than in attempting to operate small schools." 2/

10. What percent of the schools have a total enrollment of less than 100 students?

   "The highest percentage of poor and very poor schools are among those having an enrollment of less than 100 students". 3/

11. What is the average ratio of nurse administrators and instructors to students?

   "The average ratio of nurse administrators and instructors to students was 1 to 6.5". 4/

12. Are there centralized teaching plans?

13. Do central schools of nursing exist?

1/ Federal Security Agency, U.S. Public Health Service, Division of Hospital Facilities: Plans of General Hospitals For The Coordinated Hospital System. Reprinted from Architectural Record, January 1948, page 6.

2/ Brown, Esther L.: Nursing For The Future. Russell Sage Foundation, New York, 1948, page 137

3/ Vreeland, Ellwynne M.: Some Qualitative and Quantitative Factors in Nurse Education. Public Health Reports, Vol. 63, No. 52. U. S. Government Printing Office, Washington, D.C., 1948, p. 1689.

4/ Ibid, page 1688.

14. Are the teaching resources of junior colleges utilized?

"Especially recommended as transitional steps toward the future are the creation of central schools of nursing, and utilization of the teaching resources of junior colleges." 1/

15. What percent of the administrative and instructional nursing personnel have one or more academic degrees?

"General qualifications for faculty positions in schools of nursing and related nursing service positions:

A broad general education equivalent to at least two years of general college work.

Advanced professional study in a college or university of good standing with academic recognition in the form of at least the bachelor's (preferably the master's) degree to include not less than one year of specialized, professional preparation in a particular field with adequate related experience in this area." 2/

16. What correlations are revealed when State Board examination results over a period of time are analyzed in relation to such factors as:

a. Size of the hospitals in which students receive their major clinical experiences?
b. Size of student enrollment?
c. Number of clinical services provided each student?
d. Qualifications of administrative and instructional nursing personnel?

"It is believed that the educational achievement (performance in licensure examination) of the graduates of the schools within a State as determined by the respective State boards of nurse examiners is an important criterion in evaluating the educational program of a State". 3/

17. What is the ratio of diploma to degree students?

"Two thirds of the States had in 1944-45 less than 1 student in 14 or no students at all (the case in 7 States) enrolled in programs leading to an academic degree. To meet the need for better patient care and to provide for better prepared instructors, administrators, and leaders in nursing, this ratio is far too small."4/

1/ Brown, Esther L.: Nursing For The Future, Russell Sage Foundation, New York, 1948, p. 127.

2/ National League of Nursing Education, Committee on Revision of the Faculty Pamphlet: Faculty Positions In Schools of Nursing and How to Prepare For Them. National League of Nursing Education, 1790 Broadway, N.Y. 19, 1946, p. 13.

3/ Vreeland, Ellwynne M.: Some Qualitative and Quantitative Factors in Nurse Education. Public Health Reports, Vol. 63, No. 52. U.S. Government Printing Office, Washington, D.C., 1948. p. 1684.

4/ Ibid, p. 1688.

Degree programs for undergraduate nurses

18. What percent of the schools controlled by colleges or universities are:

    a. Independent administrative units?
    b. Separate departments or schools?

19. Do specific written contracts exist between the college or university and the hospitals and agencies providing student experience?

20. Are qualified members of the administrative and instructional nursing personnel given academic status?

21. What is the basis for the selection of students?

22. Are degrees in nursing granted on the same basis as other degrees?

23. Do the curricula meet the requirements of:

    a. College or university?
    b. Professional practice and State registration?

24. Does the college or university give recognition to the curriculum of the school of nursing on the same basis as other departments or divisions?

Criterion

"It is a complete structural and functional unit for the conduct of a program of nursing education and is an integral part of a college or university."

"A clearly defined agreement is in effect between the college or university and the affiliating agencies regarding their responsibilities in relation to the school."

"The faculty has academic status in accordance with the statutory provisions for faculty rank in the college or university."

"Students are selected according to admission requirements by the faculty of the school. In addition to general requirements, students are selected on the basis of characteristics essential to nursing. Students are qualified for matriculation in the college or university as candidates for a degree."

"The general requirements governing the granting of degrees as established by the college or university govern the granting of degrees in nursing."

"The curriculum meets the requirements of the college or university for a baccalaureate or higher degree as well as the requirements for professional practice and State registration."

"The instruction, inclusive of class work, laboratory work, and clinical experience, which combined make up the content of the curriculum, is so related and of such quality as to command recognition comparable to that given for similar types of instruction in other departments or divisions in the college or university." 1/

If visits to the individual schools are possible, material contained in A Guide For Supervision of State Approved Schools of Nursing 2/ and Survey Methods Applied to Schools of Nursing and Hospital Nursing Service 3/ (see Survey Methods Relating to the Basic Nursing Curriculum, in a University or Collegiate School of Nursing) will suggest pertinent trends of inquiry.

Advanced Professional Programs (Programs for graduate nurses leading to a degree)

For the purpose of the present study, it has been suggested that advanced professional programs should include those offered to graduate nurses, which lead to a degree and prepare them "for positions as administrators, supervisors, or teachers in schools of nursing, nursing service, or public health nursing agencies, and for public health nursing general staff positions". 4/

Information pertinent to a gross evaluation of this type of program can be compiled from school catalogues and unpublished factual material obtainable from the colleges or universities offering such courses of study. The Association of Collegiate Schools of Nursing (2063 Adelbert Road, Cleveland, Ohio) may be able to supply additional information relative to the advanced curricula of active or associate members.

An overview of the advanced professional programs should include the following questions:

1. How many colleges or universities offer advanced professional programs?

2. How many programs of each type are available?

1/ Indiana University School of Education, Division of Nursing Education: Survey Methods Applied to Schools of Nursing and Hospital Nursing Services. Indiana University Bookstore, Bloomington, Indiana, 1948, page 48 ff.

2/ American Nurses' Association: A Guide For Supervision of State Approved Schools of Nursing, New York, 1948.

3/ Indiana University School of Education, Division of Nursing Education: Survey Methods Applied to Schools of Nursing and Hospital Nursing Services. Indiana University Bookstore, Bloomington, Indiana, 1948.

4/ Department of Studies, National League of Nursing Education: Graduate Nurses Enrolled in Colleges and Universities. American Journal of Nursing, Vol. 49: page 181 (March 1949)

3. What is the number of full-time and part-time students enrolled according to:

   a. academic level?
   b. type of program?
   c. scholarship status?

4. What percent of the enrolled students are residents of other States?

"We recommend that appropriate nursing bodies initiate planning on a State-wide basis for the distribution of the kinds of schools that are designated to meet State needs; and that planning be undertaken on a regional and Nation-wide basis for those higher forms of nursing education that require fewer units, but consequently greater selectivity of resources and location." 1/

"Until such time as the number of students completing basic degree programs is vastly increased, attention must obviously be placed upon helping graduate nurses to obtain the baccalaureate. Simultaneously preparation on higher levels must be forwarded as rapidly as possible." 2/

"Through such a study (comprehensive study of advanced curricula) universities might be encouraged to cultivate those particular courses for which they were best fitted without feeling obliged to continue to offer preparation for several kinds of specialization. Almost certainly this exploration would point to the desirability of setting aside a few centers devoted exclusively to the development of truly graduate work. Their faculties would be freed from dissipation of time and energy concomitant to helping graduate nurses prepare for the bachelor's degree. Instead they would be expected to concern themselves through experimental teaching, research, and writing with the further development of content and method for all nursing education, and with producing teachers more fully prepared to staff university schools." 3/

If a detailed study of each advanced professional program is to be made, suggestions contained in A Guide For The Organization of Collegiate Schools of Nursing 4/ and Courses in Clinical Nursing For Graduate Nurses 5/ will be helpful.

1/ Brown, Esther L.: Nursing For The Future, Russell Sage Foundation, New York, 1948, page 186.
2/ Ibid; page 161
3/ Ibid; page 162 ff. (Writer's parenthetical insert)
4/ National League of Nursing Education: A Guide For The Organization of Collegiate Schools of Nursing. National League of Nursing Education, New York, 1946.
5/ National League of Nursing Education: Courses In Clinical Nursing For Graduate Nurses. National League of Nursing Education, New York, 1945.

Approved Training Programs For Non-Professional Nursing Personnel

The source of information for obtaining data relative to approved training programs for non-professional nursing personnel will depend upon the licensure laws of the State.

> "In states with laws for practical nurse licensure, it is expected that practical nurses will be prepared in schools of practical nursing offering programs of training approved by the state board of education and state board of nurse examiners, or other legally authorized accrediting agency which approves schools of professional nursing in that state...
>
> "Until a single, national accrediting body for both professional and practical nursing schools is functioning, schools in states where the licensing law does not provide for the licensing of practical nurse schools are urged to apply for approval to the Committee on Administration of the Accrediting Program of the National League of Nursing Education which cooperates with the National Association for Practical Nurse Education." 1/

The National Association For Practical Nurse Education (654 Madison Avenue, New York City, N.Y.) may be able to supply additional information relative to approved programs in the State.

Answers to the following questions will influence the conclusions reached as a result of a gross evaluation of approved programs of training for non-professional nursing personnel.

1. How many of the programs are conducted by:
   a. boards of management or social agencies?
   b. hospitals?
   c. public vocational schools?

> "The Committee decided unanimously, after long consideration, that training should be provided by vocational or adult education units of the public school system...". 2/

2. How many of the programs are:
   a. less than 12 months?
   b. 12 months or more?

1/ Joint Committee on Auxiliary Nursing Service: Practical Nurses and Auxiliary Workers for the Care of the Sick. American Nurses' Association, New York. 1947, page 8.

2/ Brown, Esther L.: Nursing For The Future. Russell Sage Foundation, New York, 1948, page 104.

3. What percent of the programs include elementary nursing care for the following types of patients:

   a. medical?
   b. surgical?
   c. pediatric?
   d. obstetrical or urological?

4. How many of the programs provide instruction and supervised practice in:

   a. home nursing?
   b. care of chronic and convalescent patients?

   "It (Professional Advisory Committee) recommended that the period of training be one year, divided between classroom and bedside instruction, and that an understanding of the patient as well as nursing techniques be emphasized." 1/

   "A practical nurse is a person trained to care for subacute, convalescent, and chronic patients requiring nursing services at homes or in institutions. . ." 2/

5. What educational qualifications are required for trainees?

   "The principal educational qualifications for trainees should be their ability to profit from instruction. However, it is suggested that the completion of 2 years of high school, or the equivalent, may be expected of applicants under 25 years of age, and the completion of the eighth grade, or its equivalent, may be required for applicants over 25 years of age." 3/

6. What are the general educational qualifications of the administrative and instructional personnel?

"Director -	a good general education, with academic recognition of a bachelor's degree in nursing education.
Instructor in nursing; Supervisor of Clinical Experience -	a good general education; two years or more of college are recommended, including courses in principles of learning and teaching and related methods." 4/

1/ Brown, Esther L.: Nursing For The Future. Russell Sage Foundation, New York, 1948, page 104. (Writer's parenthetical insert)

2/ Federal Security Agency, Office of Education: Practical Nursing - An Analysis of the Practical Nurse Occupation with Suggestions for the Organization of Training Programs. U. S. Government Printing Office, Washington, D.C., 1947. page 1 ff.

3/ Ibid; page 141.

4/ Curriculum and Accrediting Committees, National Association For Practical Nurse Education: Practical Nurse Education. National Association For Practical Nurse Education, New York, 1947, page 9.

7. Is there an active interest in practical nursing?

> "No system of training for practical nurses is likely to succeed unless the public that creates broad general policy and provides funds, educators who design and operate instructional programs, hospitals and agencies that provide clinical facilities, and nursing associations and state boards of control that set standards and influence recruiting are prepared to manifest an active interest in practical nursing far beyond any interest yet shown." 1/

Material contained in Practical Nursing - An Analysis of the Practical Nurse Occupation with Suggestions for the Organization of Training Programs 2/ will be useful as a basis for evaluating individual programs. The forthcoming publication of the committee appointed by the U. S. Office of Education to develop a practical nursing curriculum guide should also be helpful.

Financial Support For Preparing Nursing Personnel

It is desirable to have information on the cost of preparing professional and non-professional nursing personnel under the present system of nursing education in the State. If such data are not available and a study of this type is contemplated, reference should be made to Administrative Cost Analysis For Nursing Service and Nursing Education 3/ and Cost Analysis For Schools of Nursing. 4/

1/ Brown, Esther L.: Nursing For The Future. Russell Sage Foundation, New York, 1948, page 105.

2/ Federal Security Agency, Office of Education: Practical Nursing - An Analysis of the Practical Nurse Occupation with Suggestions for the Organization of Training Programs. U. S. Government Printing Office, Washington, D. C., 1947.

3/ Pfefferkorn, Blanche and Rovetta, Charles: Administrative Cost Analysis For Nursing Service and Nursing Education. American Hospital Association and National League of Nursing Education, New York, 1940.

4/ Federal Security Agency, Public Health Service: Cost Analysis For Schools of Nursing, U. S. Government Printing Office, Washington, D.C.

The economic aspect of future plans for the education of professional nurses and training of non-professional nursing personnel should take cognizance of the recommendations pertinent to finances contained in Nursing For The Future 1/, A Program For The Nursing Profession 2/, and Higher Education For American Democracy 3/.

Computing the Annual Number of Students who must be Enrolled in Basic Schools of Nursing and Training Programs for Non-professional Nursing Personnel to Meet Estimated Needs.

It is necessary to compute the number of professional and non-professional nursing personnel who should be enrolled each year for a selected period of time in order to meet the estimated needs for nursing personnel. The length of time selected for this purpose will depend upon the extent of the current deficit of nursing personnel and the conclusions reached as a result of the evaluation of the present system of nursing education. Computations relative to annual enrollments must include the number of nursing personnel required to:

1. maintain the current pool
2. make up the current deficit and provide for future needs.

The future pool of nursing personnel is composed of the number of:

1. professional and non-professional nursing personnel currently employed (minus the attrition rate).
2. students currently enrolled in approved basic schools for professional nurses and training programs for non-professional nursing personnel (minus the withdrawal rate).

1/ Brown, Esther Lucile: Nursing For The Future. Russell Sage Foundation, New York, 1948.

2/ Committee On The Function of Nursing: A Program For The Nursing Profession, MacMillan Company, New York, 1948.

3/ Report of The President's Commission on Higher Education: Higher Education For American Democracy. U. S. Government Printing Office, Washington, D.C. 1947.

The attrition rate for active registered nurses has been variously estimated from about 6 to 10 percent per annum. In the absence of a comparable rate for non-professional nursing personnel it may be necessary to assume the same loss per year as that of the professional group.

The average withdrawal rate for students in approved basic schools of nursing and training programs for non-professional nursing personnel can be computed by the following steps:

1. subtract the number of students graduated annually from the number of students originally admitted to those classes.
2. divide the result obtained through step 1 by the number of students originally admitted to those classes.

Example:

500 number of students admitted to approved schools of nursing in State X in 1945

- 350 number of students who graduated from approved schools of nursing in State X in 1948 (the required period of time for approved programs in basic schools of nursing in State X is 3 years).

150 number of students who withdrew from approved schools of nursing in State X, 1945 - 1948.

150 ÷ 500 = 30% withdrawal rate for the students admitted to approved schools of nursing in State X in 1945.

When the withdrawal rate has been computed, the number of students who can be expected to graduate in the future can be estimated by multiplying the number of students admitted (currently and in the future) by the complement of the withdrawal rate (the resulting percentage when the withdrawal percentage is subtracted from 100 percent).

Example:

700 number of students admitted to approved schools of nursing in State X in 1947

X 70% complement of the withdrawal rate (100% - 30% (withdrawal percentage) = 70%)

490 number of students who can be expected to graduate in State X in 1950 from those admitted to approved schools of nursing in 1947.

Information relative to the number of students admitted and graduated from approved basic schools of nursing and training programs for non-professional nursing personnel can probably be obtained from the State Board of Nurse Examiners or the appropriate licensing agency.

The following example illustrates how the annual number of students who must be enrolled in basic schools of nursing in State X (1950 - 1956) was computed in order to meet the estimated need for graduate professional nurses in 1959.

Example:

Statement of problem:

(1) 1950 - 1956 period of time selected in which to meet the estimated need for graduate professional nurses in State X in 1959.

(2) 2600 number of graduate professional nurses currently employed in State X (1949)

(3) 4400 estimated number of graduate professional nurses needed in State X (1959)

(4) 8% attrition rate per year for graduate professional nurses

(5) 30% average withdrawal rate for students admitted to approved basic schools of nursing

(6) 180 number of professional student nurses who can be expected to graduate in 1950

257 number of students admitted to approved schools of nursing in 1947
X 70% complement of the withdrawal rate (100% - 30% = 70%)
180

190 number of professional student nurses who can be expected to graduate in 1951

271 number of students admitted to approved schools of nursing in 1948
X 70% complement of the withdrawal rate
190

200 number of professional student nurses who can be expected to graduate in 1952

286 number of students admitted to approved schools of nursing in 1949
X 70% complement of the withdrawal rate
200

Solution:

Attrition Table

(Based on 8% attrition rate per year for graduate professional nurses)

At end of 1 year	only	92.0%	will be left		(100.0 - 8.0)
" " " 2 years	"	84.6%	"	"	(92.0 x 92.0)
" " " 3 years	"	77.8%	"	"	(84.6 x 92.0)
" " " 4 years	"	71.6%	"	"	(77.8 x 92.0)
" " " 5 years	"	65.9%	"	"	(71.6 x 92.0)
" " " 6 years	"	60.6%	"	"	(65.9 x 92.0)
" " " 7 years	"	55.8%	"	"	(60.6 x 92.0)
" " " 8 years	"	51.3%	"	"	(55.8 x 92.0)
" " " 9 years	"	47.2%	"	"	(51.3 x 92.0)
" " "10 years	"	43.4%	"	"	(47.2 x 92.0)

1128 number of graduate professional nurses currently employed who will be left at the end of 10 years (1959).

2600 number of graduate professional nurses currently employed
x 43.4% refer to attrition table, 10th year
1128

85 number of professional nurses who will be left at the end of 9 years (1959) from the number of professional student nurses who can be expected to graduate in 1950.

180 number of professional student nurses who can be expected to graduate in 1950.
x 47.2% refer to attrition table, 9th year
85

97 number of professional nurses who will be left at the end of 9 years (1959) from the number of professional student nurses who can be expected to graduate in 1951.

190 number of professional student nurses who can be expected to graduate in 1951
x 51.3% refer to attrition table, 8th year
97

112 number of professional nurses who will be left at the end of 9 years (1959) from the number of professional student nurses who can be expected to graduate in 1952.

200 number of professional student nurses who can be expected to graduate in 1952
x 55.8% refer to attrition table, 7th year
112

1422 number of graduate professional nurses available in 1959 from those currently employed (1949) plus the number remaining from those who can be expected to graduate in 1950, 1951, 1952.

4400 estimated number of graduate professional nurses needed in 1959.
-1422

2978 number of graduate professional nurses to be supplied by 1959 from student nurses graduating in 1953 - 1959 who must be enrolled in 1950 - 1956.

n = number of professional student nurses who should be enrolled each year 1950 - 1956

.7n = number of professional student nurses who can be expected to graduate each year 1953 - 1959 (based on 30% withdrawal rate)

.7n (60.6%) refer to attrition table, 6th year = number of professional nurses who will be left in 1959 from those who can be expected to graduate in 1953

.7n (65.9%) refer to attrition table, 5th year = number of professional nurses who will be left in 1959 from those who can be expected to graduate in 1954

.7n (71.6%) refer to attrition table, 4th year = number of professional nurses who will be left in 1959 from those who can be expected to graduate in 1955

.7n (77.8%) refer to attrition table, 3rd year = number of professional nurses who will be left in 1959 from those who can be expected to graduate in 1956

.7n (84.6%) refer to attrition table, 2nd year = number of professional nurses who will be left in 1959 from those who can be expected to graduate in 1957

.7n (92%) refer to attrition table, 1st year = number of professional nurses who will be left in 1959 from those who can be expected to graduate in 1958

.7n = number of professional nurses who can be expected to graduate in 1959.

.7n (.606 + .659 + .716 + .778 + .846 + .92 + 1) = 2978.

Adding the factors inside the parenthesis produces:

.7n (5.525) = 2978

Multiplying .7n times 5.525 produces

3.8675 n = 2978

Solving the equation for n

n = 770 number of students who must be enrolled in basic schools of nursing in State X each year 1950 - 1956 to meet the estimated need for graduate professional nurses in 1959.

Computing the Average Percent of High School Graduates who must be Enrolled in Nursing Programs to Produce the Number of Nursing Personnel Needed

Having estimated the annual number of students who must be enrolled (for a selected period of time in the future) in basic schools of nursing and training programs for non-professional nursing personnel, it is expedient to estimate the number of students who will graduate from high school for the corresponding projected period of time. When this has been accomplished, it will be possible to determine the approximate percent of high school graduates who must be enrolled in undergraduate nursing programs to meet the quota of professional and non-professional nursing personnel needed.

The annual number of high school graduates in the future can be estimated by subtracting the number of children who die before they enter school from the number of live births 18 years previous to graduation, and multiplying the remainder by the average percent (for the latest five year period) of students who entered the first grade and completed high school. Since the majority of nursing personnel are women, consideration should be given to including females only in the computations entailed in the preceding suggested method.

Example:

Statement of problem:

189,458 - number of female live births 18 years previous to graduation (1932) in State x

14,825 - number of deaths (1932-1937) among female preschool children born in 1932 in State x

11,918	under 1 year	(1933)
1,469	1 year	(1934)
623	2 years	(1935)
467	3 years	(1936)
348	4 years	(1937)

47% - average percent of female students entering first grade who completed high school during the last five years (1944 - 1949) in State x.

Solution:

189,458

- 14,825

174,633 estimated number of female children born 18 years previously who entered the first grade in 1938.

174,633

X 47%

82,078 estimated number of female high school graduates in State x in 1950.

Note: The example makes no corrections for migration or the number of deaths of preschool female children occurring in the fifth year of life. If information relative to these two items is available in the State, they should be incorporated into the estimate.

The State registrar of vital statistics will have information pertinent to the number of live births, and deaths of preschool children. The annual statistical reports of births 1/ and deaths 2/ published (prior to 1945) by the Bureau of the Census contains information for each State in the form used in the preceding example. The State Department of Education is the agency to be contacted to ascertain the average percent of students entering the first grade who completed high school during the latest five year period.

The average percent of high school graduates who must be enrolled in nursing programs to produce the number of nursing personnel needed, is revealed when the total number of students who must be enrolled in nursing programs for a selected period of time in the future is divided by the total number of high school graduates for a corresponding period of time.

1/ Bureau of the Census, United States Department of Commerce: Annual Report, Birth, Still Birth, and Infant Mortality Statistics for the Birth Registration Area of the United States, U. S. Government Printing Office, Washington, D.C.

2/ Bureau of the Census, United States Department of Commerce: Annual Report - Mortality Statistics. U. S. Government Printing Office, Washington, D.C.

Example:

Statement of problem:

12000 estimated total number of students who must be enrolled in nursing programs to meet the need for nursing personnel in State x in 1960

8000 students in basic schools of nursing

4000 students in training programs for non-professional nursing personnel

150,000 estimated total number of high school graduates in State x 1950 - 1960.

Solution:

$\frac{12,000}{150,000}$ = 8% average percent of high school graduates who must be enrolled in nursing programs (basic schools of nursing and training programs for non-professional nursing personnel) to meet the need for nursing personnel in State x in 1960.

Summary: SECTION III

Emphasis in SECTION III has been placed on the points:

1. evaluating the present system of nursing education in the State
2. computing the annual number of students who must be enrolled in basic schools of nursing and training programs for non-professional nursing personnel to meet estimated needs.
3. computing the average percent of high school graduates who must be enrolled in nursing programs to produce the number of nursing personnel needed.

Having considered the preceding factors, the next step is to study the available educational and clinical resources in the State not now fully utilized. When these potentials are revealed, a plan should be formulated by which they can be woven into integrated systems of education for nursing personnel. Once having determined the need for nursing personnel who can care for general and psychiatric patients and for patients in urban and rural hospitals, then facilities for this

type of preparation should be included in the educational program. Once having determined that public health nursing on a staff level is to be expected of graduates of degree programs, then facilities for the required field experience must be sought. The conclusions of this study should recommend the number, capacity, and location of professional programs (basic and advanced) and non-professional programs which the State should operate to meet estimated needs for nursing personnel and to prepare these professional nurses and non-professional nursing personnel to function effectively in the light of emerging standards.

The following chart is a condensation of the discussion in SECTION III relative to questions, probable sources for obtaining information, and references pertinent to an overall gross evaluation of the present system of nursing education in a State according to type of program.

Chart 3. Questions, probable sources for obtaining information, and references pertinent to an overall gross evaluation of the present system of nursing education in a State according to type of program.

Type of Program	Questions relevant to an overall gross evaluation of the programs	Probable sources for obtaining information	References
Basic Professional (Diploma and/or degree programs for undergraduate student nurses)	1. Are there sufficient opportunities for able potential students from all groups to enroll in schools of nursing? 2. What percent of the schools are accredited by: a. State Board of Nurse Examiners? b. National Nursing Accrediting Service? 3. How many of the schools have been accredited as graduating nurses eligible for staff positions in Public Health nursing agencies? 4. How many of the Collegiate schools providing degree programs for undergraduate nurses are recognized by the Association of Collegiate Schools of Nursing as being: a. Active members? b. Associate members? 5. What percent of the hospitals associated with schools of nursing are approved by: a. Council on Medical Education and Hospitals for: internships? residences? both internships and residences? b. American College of Surgeons.	State Board of Nurse Examiners National League of Nursing Education Publications American Nurses' Association: Facts About Nursing. 1790 Broadway, New York 19, New York. National League of Nursing Education, Department of Studies: State Accredited Schools of Nursing. National League of Nursing Education, New York, 1946. Vreeland, Ellwynne M.: Some Qualitative and Quantitative Factors in Nurse Education. Public Health Reports, Vol. 63, No. 52 U. S. Government Printing Office Washington, D.C., 1948.	Brown, Esther L. Nursing For The Future, Russell Sage Foundation, New York, 1948. The Commission on Hospital Care: Hospital Care in the United States. Commonwealth Fund, New York 1947 Federal Security Agency, Public Health Service, Division of Hospital Facilities: Plans of General Hospitals For The Coordinated Hospital System. Reprinted from Architectural Record, January 1948. Vreeland, Ellwynne M.: Some Qualitative and Quantitative Factors in Nurse Education. Public Health Reports, Vol. 63 No. 52. U. S. Government Printing Office, Washington, D.C. 1948.

6. How many of the schools are controlled by:

   What proportion of the total student enrollment is in:

   a. Colleges or universities?

   b. Hospitals with a daily average patient census of 150 or more?

   c. Hospitals with a daily average patient census of less than 150?

7. What percent of the students have planned experience in:

   a. Nursery school?

   b. Psychiatry?

   c. Tuberculosis?

   d. Other communicable disease?

   e. Out-patient department?

   f. Community health?

8. How many students have experience in a:

   a. large medical center?

   b. small rural hospital?

9. How many schools are operated by the following types of specialized hospitals:

   a. Mental?

   b. Tuberculosis?

   c. Children's?

10. What percent of the schools have a total enrollment of less than 100 students?

Arestad, F. H., Leveroos, E. H., Albus, W. R., and Corbett, W. W.: Hospital Service in the United States. Council on Medical Education and Hospitals of the American Medical Association, Chicago, Illinois.

National League of Nursing Education, Committee on Revision of the Faculty Pamphlet: Faculty Positions in Schools of Nursing and How to Prepare For Them. National League of Nursing Education, 1790 Broadway, N. Y., 19, New York, 1946.

Indiana University School of Education, Division of Nursing Education: Survey Methods Applied to School of Nursing and Hospital Nursing Services. Indiana University Bookstore, Bloomington, Indiana, 1948.

11. What is the average ratio of nurse administrators and instructors to students?

12. Are there centralized teaching plans?

13. Do central schools of nursing exist?

14. Are the teaching resources of junior colleges utilized?

15. What percent of the administrative and instructional nursing personnel have one or more academic degrees?

16. What correlations are revealed when State Board examination results over a period of time are analyzed in relation to such factors as:

    a. Size of the hospital in which students receive their major clinical experiences?

    b. Size of student enrollment?

    c. Number of clinical services provided each student?

    d. Qualifications of administrative and instructional nursing personnel?

17. What is the ratio of diploma to degree students?

Degree programs for undergraduate nurses:

18. What percent of the schools controlled by colleges or universities are:

    a. independent administrative units?

    b. separate departments or schools?

19. Do specific written contracts exist between the college or university and the hospitals and agencies providing student experience?

20. Are qualified members of the administrative and instructional nursing personnel given academic status?

21. What is the basis for the selection of students?

22. Are degrees in nursing granted on the same basis as other degrees?

23. Do the curricula meet the requirements of:

    a. college or university?

    b. professional practice and State registration?

24. Does the college or university give recognition to the curriculum of the school of nursing on the same basis as other departments or divisions?

Note: If visits to the individual schools are possible and a detailed study of each program can be made, the following references will suggest pertinent trends of inquiry:

a. American Nurses' Association: A Guide For Supervision of State Approved Schools of Nursing, New York, 1948.

b. Indiana University School of Education, Division of Nursing education: Survey Methods Applied to Schools of Nursing and Hospital Nursing Services. Indiana University Bookstore, Bloomington, Indiana, 1948.

Advanced Professional (programs for graduate nurses leading to a degree)	1. How many colleges or universities offer advanced professional programs? 2. How many programs of each type are available? 3. What is the number of full-time and part-time students enrolled according to: a. academic level? b. type of program? c. scholarship status? 4. What percent of the enrolled students are residents of other States?	School catalogues and unpublished factual material from the colleges or universities offering advanced professional programs Association of Collegiate Schools of Nursing	Department of Studies, National League of Nursing Education: Graduate Nurses Enrolled in Colleges and Universities. American Journal of Nursing Vol.49 Page 181 (March 1949) Brown, Esther L. Nursing For The Future, Russell Sage Foundation, New York, 1948.

Note: If visits to the individual schools are possible and a detailed study of each program can be made, the following references will suggest trends of inquiry:

a. National League of of Nursing Education: A Guide For the Organization of Collegiate Schools of Nursing. National League of Nursing Education, New York, 1946.

b. National League of Nursing Education: Courses In Clinical Nursing For Graduate Nurses. National League of Nursing Education, New York, 1945.

Approved training programs for non-professional nursing personnel	1. How many of the programs are conducted by: a. boards of management or social agencies? b. hospitals? c. public vocational schools? 2. How many of the programs are: a. less than 12 months? b. 12 months or more?	<u>States with laws for practical nurse licensure</u> State Board of Education, and State Board of Nurse Examiners, or other legally authorized accrediting agency which approves schools of professional nursing in the State	Joint Committee on Auxiliary Nursing Service: Practical Nurses and Auxiliary Workers for the Care of the Sick. American Nurses' Association, New York, 1947

3. What percent of the programs include elementary nursing care for the following types of patients: a. medical? b. surgical? c. pediatric? d. obstetrical or urological? 4. How many of the programs provide instruction and supervised practice in: a. home nursing? b. care of chronic and convalescent patients? 5. What educational qualifications are required for trainees? 6. What are the general educational qualifications of the administrative and instructional personnel? 7. Is there an active interest in practical nursing?	States without laws for practical nurse licensure Committee on Administration of the Accrediting Program of the National League of Nursing Education National Association For Practical Nurse Education	Brown, Esther L.: Nursing For The Future. Russell Sage Foundation, New York, 1948. Federal Security Agency, Office of Education: Practical Nursing-An Analysis of the Practical Nurse Occupation with Suggestions for the Organization of Training Programs. U. S. Government Printing Office, Washington, D.C., 1947. Curriculum and Accrediting Committees, National Association For Practical Nurse Education: Practical Nurse Education. National Association For Practical Nurse Education, New York, 1947.

Note: If visits to the individual schools are possible and a detailed study of each program can be made, the following references will suggest pertinent trends of inquiry:

a. Federal Security Agency, Office of Education: Practical Nursing - An Analysis of the Practical Nurse Occupation with Suggestions for the Organization of Training Programs. U. S. Government Printing Office, Washington, D.C., 1947.

b. Forthcoming publication of the Committee appointed by the Office of Education to develop a practical nursing curriculum.