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CURRENT AND FUTURE USE OF THE **MULTISKILLED HEALTH WORKER**

Joyce Brandt¹

Chet Rzonca

Abstract: Changes in health care delivery are affecting the manpower needs of the health care industry. The two research questions in this study examined one aspect of the manpower changes: the current use and future need for **multiskilled** manpower. The study sample represents 40 percent of all licensed acute care hospitals in Iowa under 100 beds for a total of 38 hospitals. Frequency tables and percentages were used to portray the number of small hospitals that were currently assigning manpower to multiple skills. All hospitals were found to be currently using some personnel as **multiskilled** workers. Registered nurses were most frequently given **multiskilled** assignments and respiratory therapy was the most frequent skill assigned **interdepartmentally**. Seventy-nine percent of the respondents indicated they **would** use more **multiskilled** manpower if available. Further research is recommended to determine if this trend is occurring in larger hospitals and other aspects of the health care delivery system.

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Introduction

The health care industry is a social institution in transition. Many of the changes are reactions to environmental changes and governmental interventions in health care delivery (Baker, 1986; Raffel, 1984). In addition, there has been a continuous growing demand for health care services due to increased population, advanced technology and increased access to health care services (Baker, 1986; Hatch, 1986). These changes are affecting the manpower needs of the industry. Health occupations educators, who in part prepare the labor force for this industry, must recognize these changes and systematically plan to revise and develop programs to help meet the manpower needs necessary for the delivery of quality health care services to the public (Jaffe, Oglesby & Drewes, 1982; National Commission on Allied Health Education [NCAHE], 1980; Sorkin, 1986). Thus, this study examines one component of the changing manpower needs in small hospitals, the current use and future needs for the **multiskilled** health worker.

Purpose of the Study

The purpose of this study was to describe the current use and determine if there is a future need for **multiskilled** health workers in small Iowa hospitals and to further describe the skills and mixes of skills that would provide the type of **personnel** preferred by hospital managers. Specifically the two main research questions were (a) Are small hospitals in Iowa using health personnel as **multiskilled** workers? and (b) What is the future potential use for **multiskilled** personnel?

Methodology

During the planning for the study the Iowa Hospital Association, small hospital division, was contacted and provided technical assistance for the

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study . As a result, the study was discussed with hospital administrators at a scheduled meeting and was described in a weekly mailing prior to the first mail contact requesting participation. In addition to supporting the study, the Iowa Hospital Association requested an opportunity to act as an advisory committee in considering the results and determining future curricular needs.

Sample Population

The population for the study consisted of the 96 small Iowa hospitals (under 100 beds) that are licensed by the Iowa Department of Inspections and Appeals to provide general acute care. A random sample of 43 hospitals was selected from this population. The population and sample were stratified by size and long term care patient services. Thirty-eight respondents (40% of the population and 88% of the initial sample) agreed to participate in the study .

Instrumentation

The questionnaire to collect the data was divided into three sections. Section A provided demographic information regarding the hospitals in the survey, including ownership, services provided and types of specialty personnel on staff. Section B contained questions designed to describe the current use of **multiskilled** health personnel. The questions in Section C were designed to determine if respondents were interested in using more/other types of **multiskilled** health personnel in the future. Sections B and C also included some general questions to determine the respondents' awareness and support of **multiskilled** workers, including advantages and disadvantages of using **multiskilled** workers.

Although, similar studies had been previously conducted by other researchers, the instruments that were used did not specifically address the

research questions of this study. Therefore, the open-ended items included on the questionnaire used for this study were developed with the assistance and advice of the Iowa Hospital Association and the dissertation committee. The original questionnaire was piloted in three small hospitals. Following the pilot study, several items were modified according to suggestions and recommendations with 100% agreement of committee members.

Data Collection

The data were collected through a **pre-scheduled** phone interview with the persons identified by the chief administrator. The phone interview was used in an attempt to increase the reliabilities of the data collected, increase the response rate and to decrease the number of unanswered questions. The cost factor in time and phone expenses was efficient when compared with on site interviews.

The process used to obtain the assistance from the small hospitals included the initial information in the Lettergram from the Iowa Hospital Association, followed by a personal letter to the chief administrator from the study investigator. The letter requesting participation in the study included a copy of the questions that would be asked during the phone interview. The weeks following this mailing administrators were contacted by phone and asked if they were willing to participate in the study. Once the administrator agreed to participate, he/she was asked to identify the appropriate person(s) to complete the study. Thirty-one of the respondents were hospital administrators, five respondents were department heads and two were personnel directors.

The data were analyzed and displayed through frequency distributions. The data provided tables of frequency counts and, when appropriate, percentages of the counts were used.

Definition of Terms

The following four terms are central to the study. While there was general agreement among the respondents regarding use of these terms, some variance was expected. This slight variance along with different departmental responsibilities was expected to lead to some overlap in the use of the **inter-** and intradepartmental when describing **multicompetency** skill areas.

The term interdepartmental describes **multiskilled** workers assigned to provide services in more than one department. Intradepartmental describes **multiskilled** workers assigned to work in several units or areas within departments. Multiskilled Health Worker applies to those health care specialists who are trained, **credentialed** and assigned to (a) multiple units or areas within a department or (b) more than one department. Add-a-Comp is a term initiated by the Methodist Hospital of Indiana Corporation (1986) to describe preparation for interdepartmental assignment to traditional health specialists. The assignments and skills of **multiskilled** workers are diverse.

Results and Discussion

For the first research question "Are hospitals in Iowa using health personnel as **multiskilled** workers?", respondents identified the additional skill areas they had assigned to traditional health care workers. For the second research question, "What is the future potential for the use of health

care personnel in multiple skills?", respondents identified desirable future added competencies and skill mixes.

Table 1 identifies competency areas assigned to traditional health care workers as reported by the respondents. In order for a competency area to be initially listed in the table, at least three responding departments had assigned the competency area to traditional health care workers. The entire array of skills reported are therefore not presented in the table. In total, 39 skill areas were identified by at least one respondent. Specific skills within interdepartmental assignments were not identified. However, it may be assumed that the additional competencies assigned on an interdepartmental basis tend to be basic and are certainly not inclusive of all skills performed by a traditionally prepared health care worker.

Current Use of **Multiskilled** Personnel

The current use of health personnel as **multiskilled** health workers was measured by determining (a) if personnel were assigned intradepartmentally, and (b) if and to what department personnel were assigned interdepartmentally. The data were collected by hospital department.

Intradepartmental assignments, the cross-training model. Hospital departments are often subdivided into specialty areas to provide the technical services required in each area. For example, nursing service is often subdivided into units such as obstetrics, and medical-surgical units. It has often been the practice to hire and assign personnel to work only within a specialty unit within one department. The literature refers to the use and the training of personnel to work across all areas within a department as cross-training.

All respondents reported **at** least one person in one department was trained and assigned to work in more than one unit or area within a

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Table 1

Frequency and Percentage Distribution of Selected Competencies Currently Assigned to Credentialed

Personnel (N = 38)¹

Occupational Skill/Competency Areas	Registered Nurse		Licensed Practical Nurse		Nurse Aide/Orderly		Laboratory Personnel		Respiratory Personnel		Radiography Personnel		Medical Records		Emergency Personnel	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1. Respiratory	15	39	8	21	8	21	3	8							4	11
2. Laboratory	1	3									3	8				
3. Radiography	1	3					6	16								
4. Physical Therapy	4	11	5	13	1	3										
5. EKG	5	13	4	11			8	19	5	13						
6. Paramedic/ Emergency			3	8	2	5										
7. Ward Clerk/ Switchboard			2	5	8	21										
8. Business Office													4	11		
9. Housekeeping					2	5									3	8
10. Home Health Care	4	11	1	3	2	5			1	3						
11. Discharge Planning	3	8											1	3		
12. Quality Assurance	6	16											6	16		
13. Education Department	4	11														
14. Infection Control	4	11														
15. Stress Testing	1	3							4	11						

¹For a skill area to be initially listed in the table a minimum of three respondents had to assign the skill to a traditional health specialty worker.

department. The cross-trained personnel assignments were often made on a daily basis dependent on the patient care services and staffing needs of the individual units.

Interdepartmental assignments, the added competency model. Thirty-six (95%) of the 38 respondents in the sample reported they trained and assigned at least one health care specialty group to provide additional services in other departments. The number of specialty groups assigned to other departments per hospital ranged from 1-6 specialty groups.

Registered nurses. The Iowa Administrative Code (470, Chapter 51) requires that all acute care hospitals in Iowa have at least one registered nurse on staff at all times. In addition, the nursing department provides the largest proportion of direct patient care services in the hospital. As a result, the greatest percentage of staff in all hospitals is in nursing service. Traditionally, registered nurses, licensed practical nurses and nurse aides are the health occupations personnel who provide the majority of hospital staffing.

Thirty-six (95%) of all the respondents surveyed reported they were using at least **some** of the registered nurses on staff in all nursing care areas. Several of the respondents commented that frequently the patient census was low or nonexistent in specialty areas. In an attempt to better utilize nursing staff and provide full-time employment, respondents were required to **use** the registered nurses in all areas staffed by nursing service. Several respondents reported it was only the experienced staff that were cross-trained to work in more than one of nursing service areas, however, they would like to be able to exercise this option with all nursing staff.

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Respondents reported registered nurses were assigned to 11 tasks considered to be outside the nursing department. These are classified as interdepartmental or additional skill assignments. The most frequently assigned interdepartmental task for registered nurses was respiratory therapy. A total of 15 (39%) of the total sample assigned registered nurses to provide respiratory therapy skills. The additional tasks to which registered nurses were assigned are listed in Table 1.

The current shortage of health personnel seems to be affecting interdepartmental assignments for registered nurses. Five respondents reported they would like to utilize some of their nursing staff in other areas but due to the current shortage of registered nurses, they felt fortunate to have enough nurses available to staff the nursing department.

Most of the training for registered nurses assigned nontraditional skills was on-the-job training except for nurses required to take the American Heart Association Advanced Cardiac Life Saving (ACLS) course. The ACLS course is offered in the community colleges or taught by qualified staff in the hospital. (ACLS is a requirement to provide services to critical coronary care patients.)

Licensed practical nurses. Licensed practical nurses also are used to provide direct patient care in nursing departments. The scope of practice or nursing service a licensed practical nurse can provide is defined by the Iowa Board of Nursing in the Nurse Practice Act, Iowa Administrative Code, Chapter 6. The Code limits the care a practical nurse can provide and requires they practice under the direct supervision of a registered nurse in the acute care setting. Because of these restrictions and the perceived lack of diversity of the licensed practical nurse, a total of 17 (45%) of the respondents reported they do not use practical nurses or they use them

only in long term care. Two of the respondents reported they had just begun hiring licensed practical nurses because of the nursing shortage.

In those hospitals which hire practical nurses, they were assigned to six tasks considered to be outside the nursing department. As with the registered nurses the most frequent interdepartmental task to which practical nurses were assigned was respiratory therapy. Four of the tasks to which practical nurses were assigned were tasks to which registered nurses were assigned also. Two tasks, ward clerk duties and EMS responsibilities were not included in the registered nurses interdepartmental assignments.

The licensed practical nurses were prepared for all nontraditional tasks except home care and emergency medical services (EMS) through on the job training. In these two areas there are specific state approved courses required for staff to provide these services.

Nurse aides. Nurse aides are another group of personnel traditionally used in the nursing department. There are no specific training requirements for nurse aides who work in acute care, however, nurse aides who work in long term care must successfully complete a 60 hour state approved curriculum. The acute care facilities either require nurse aides to take a state approved 60 or 120 hour course or train them on the job.

Twelve (32%) of the hospitals in the survey did not use nurse aides or used them only in long term care. This change has occurred because of the increasing acuity level of patients in acute care.

Aides are trained and assigned to six additional tasks in other departments. The tasks to which nurse aides are most frequently assigned are respiratory therapy and ward clerk. The ward clerk assignment can be considered by some as cross-training or an intradepartmental assignment. In

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two of the hospitals, aides are also trained to work in housekeeping and laundry and are assigned as needed among the three departments. The literature refers to this type of utilization of personnel as broadbanding.

The laboratory department. The laboratory department provides a specialized diagnostic service in hospitals. The staff are technically trained to analyze specimens which are used in diagnosing various disorders or determining health changes that are occurring in patients. There are no state **licensure** requirements for laboratory personnel; however, Federal Standards require the person in charge of the laboratory to be either nationally certified or pass a National Laboratory examination.

Twenty-one (55%) of the respondents in the sample reported that laboratory personnel at their institution were assigned only to the medical laboratory. In the institutions assigning interdepartmental tasks, laboratory personnel were assigned most frequently to electrocardiography (EKG) and radiography services.

Radiography department. The radiography department is a specialized department that administers radiographs to assist in diagnosis or in radiation therapy to assist in treatment of some diseases. The diagnostic service is required in all licensed acute care hospitals in Iowa, while radiation therapy is a highly technical service usually provided in larger hospitals. Additionally, since some of the diagnostic equipment is highly specialized and too expensive for just occasional use, some small hospitals have contractual service agreements with larger hospitals. Others have formed co-ops and use **mobile** units to regularly transport diagnostic equipment and personnel to the various sites. Nine (24%) hospitals in the survey assign personnel within the radiography department to assist with

mobile units. The assignment to mobile units and ultrasound would reflect the cross-training model.

Sixteen (42%) of the respondents reported that radiography personnel were not assigned to other departments. The only interdepartmental assignment identified by at least three respondents was in the laboratory skill area.

A recent state law requires all persons who administer radiographs to obtain a permit to practice. Permits are issued by the Iowa Department of Public Health for two levels of personnel. These permits are for generalists who can perform all types of diagnostic examinations and for limited radiographers who can limit to the types of exams they can administer and to the setting in which they can perform these examinations. Generalists usually have completed a formal two-year program and passed a national examination. Limited radiographers have successfully completed a 100-hour State approved course and passed a national examination. However, when the law was implemented, persons who were administering radiographs in both categories, regardless of preparation, were grandfathered. There are still quite a few of these grandfathers administering radiographs in Iowa, in both licensed practitioners offices and in small hospitals.

Records department. The medical records department is responsible for maintaining patients' records, keeping the statistical data related to patients' care and submitting requests for reimbursement to third-party-payers such as insurance companies, medicare, and **medicaid**. Since the implementation of the prospective payment process for reimbursement for **medicare/medicaid** patients, the workload in the medical records departments has increased. Personnel assigned to this department require a minimum of basic knowledge of medical terminology, diagnostic

coding and reporting.

Twenty-five (66%) of the respondents in the sample reported that personnel in medical records were not assigned to tasks outside the medical records department. Of the hospitals assigning interdepartmentally, quality assurance was the most frequently reported additional task to which medical records personnel were assigned followed by the business office and discharge planning skill areas.

Respiratory therapy department. Respiratory therapy departments assist in the diagnosis and treatment of patients who have lung and heart disease. When respiratory therapy was first initiated as a therapy it was provided by registered nurses or physical therapists. Acute care hospitals are not required by state law to provide respiratory therapy services. However, there has been an increase in the number of patients with chronic lung diseases in recent years who benefit from the basic treatments provided by respiratory therapy,

Twenty-one (55%) of the respondents in the sample reported they had a respiratory therapist on staff. Another four (11%) reported they had contractual agreements with respiratory therapists to provide consulting services when needed.

Although 17 (45%) of the respondents did not have a respiratory therapist on staff, 16 (42%) respondents provided some type of respiratory therapy services. The respiratory therapy services in these hospitals were provided by a number of other health personnel, including registered nurses, licensed practical nurses, nurse aides, emergency care personnel and physical therapists. These personnel also supplemented the respiratory therapist when the therapist was not scheduled to work.

Of the 21 (55%) who reported they had respiratory therapists on staff, six (16%) assigned the respiratory therapist additional tasks in other departments. The most frequently assigned task to which respiratory therapists were assigned was EKG. Respondents reported therapists were either trained how to perform this task in their preparatory program or learned the skill on the job.

Hospital based ambulance service departments. Emergency medical personnel were hired in those hospitals that provided the local ambulance service for the community. There were four levels of ambulance services as defined by the Iowa Department of Public Health. An EMT-A service was a basic service; the next level of service was EMT-D, this was a service where EMT-A's were trained to defibrillate patients who have had cardiac arrest; EMT-I was an EMT service where personnel were prepared to provide more technical skills in treating emergencies; and the EMT-P was a service with the highest technically trained personnel.

All ambulance services were categorized relative to equipment on ambulances and the training of the personnel who provided the services on the ambulances. Personnel who provided emergency care in ambulances must have successfully completed an approved course and passed the national certification examination which had a written and performance component.

The task in other departments to which emergency personnel were assigned most frequently was respiratory therapy. In three instances, licensed practical nurses and in one instance a nurse's aide was trained to provide the emergency ambulance services. When emergency personnel were not needed on the ambulance they were assigned to the nursing department to provide nursing care. The other most frequent assignments for emergency personnel were in housekeeping, maintenance, and security. All persons who

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Potential Use of Multiskilled Health Workers

The first question asked in determining future or potential use of multiskilled health workers was "Would you use more/other types of multiskilled workers if they were available?" Thirty (79%) of the respondents, answered this question with 'yes.' Seven (18%) said they did not know; it would depend on the availability of training programs, or it would depend on the areas in which the multiskilled workers were trained. However, these seven (18%) respondents indicated something had to be done with the growing number of shortages for the health care professions. Only one respondent would definitely not use multiskilled workers in the future because in that institution patients were critically ill and the physicians would not permit use of multiskilled workers.

Respondents also were asked to identify additional skill areas and suggest the traditional health specialists who could be prepared to function in these needed areas. Table 2 identifies the additional skill areas respondents thought important and the traditionally credentialed health personnel suggested for additional preparation. In 38 instances respondents wanted to add basic respiratory therapy skills to seven established health specialties. The next most frequently mentioned additional competencies to be added were laboratory (32 times), radiography (25 times), physical therapy (23 times), and EKG skills (21 times).

All but one of the respondents felt registered nurses were one of the most versatile health workers on staff. Nine of the respondents did feel however that with the current shortages most of the registered nurses were already over extended. Twelve (32%) respondents felt registered nurses

Table 2

Frequency Distribution of Additional Competences for Credentialed Personnel

Health Occupations Skill Areas	Competency Area								Totals (N)
	Registered Nurse (N)	Licensed Practical Nurse (N)	Nurse Aide/Orderly (N)	Laboratory Personnel (N)	Respiratory Personnel (N)	Radiography Personnel (N)	Physical Therapy (N)	Occupational Therapy (N)	
Respiratory	12	13	3	3		3	3	1	38
Laboratory	3	5	1		5	18			32
Radiography		1	1	20	3				25
Physical Therapy		4	9		1			9	23
EKG	6	4	1	5	6	1			21
Cross Trained	10	4				3			17
Occupational Therapy		1	3		1		11		16
Paramedic/Emergency		5	1		5	2	1		9
Ward Clerks/Switchboard			7						7
Business Office									0
Housekeeping			3						3
Home Health Care	2	1						1	3
Activity Coordinator	1							1	2
Community Education	2							1	3
Discharge Planning		1						1	1
EEG				1					1
Dietary			2						2
Quality Assurance	1								1
Physician Assistant	1								1
Acis/Er Advanced Trauma	1								1
Substance Abuse		1							1
Coding		1							1
Purchasing						1			1
Ultra-Sound						1			1

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should be prepared to provide basic respiratory therapy skills, 10 (26%) felt they should be cross-trained to work in all areas within the nursing department and six (16%) felt they should be prepared to perform **EKG's**.

The respondents' feelings regarding practical nurses varied. Four (11%) of the respondents commented that the practical nurse was the most versatile of all health workers and they should become the health specialist to acquire additional skills. Six (16%) respondents felt added skills should be given to the practical nurse even though the board of nursing had limited their scope of practice. Thirteen (34%) of the respondents suggested respiratory skills for practical nurses making this the most frequently mentioned skill area. Five respondent's (13%) indicated laboratory and emergency skills as the second most frequently mentioned skill area.

Additional skills most frequently suggested for the nurse aides were physical therapy skills, by nine (24%) respondents and ward clerk skills by seven (18%) respondents. Other skill areas mentioned by more than one respondent were respiratory skills, by three (8%) respondents and occupational therapy skills, by three (8%) respondents.

Twenty (53%) of the respondents felt there should be some basic radiography skills performed by laboratory personnel. The respondents did not intend to replace the currently **credentialed** health worker in either area but to supplement their skills by having the other professional prepared to assist with basic skills when the workload in either area became heavy or to assist on call and during vacations. In addition, five (13%) respondents felt laboratory personnel should be prepared to perform **EKG's**. Other skills indicated for laboratory personnel were from the respiratory therapy and electroencephalograph (**EEG**) areas. The relationship between laboratory and **radiologic** skills is further attested to by the 18 (47%)

respondents who suggested that radiologic technicians be prepared to perform basic laboratory skills. Other skill areas suggested for radiographers were respiratory therapy and emergency care.

Eleven (29%) respondents suggested physical therapists could be prepared to provide basic occupational therapy skills. Several suggested this combination would be useful for rehabilitation services. Conversely, nine (24%) of the respondents indicated that occupational therapists could perform basic physical therapy skills. This relationship is similar to the skill mix identified for the **laboratory/radiography** skill area. Respiratory therapy skills were identified as a useful addition for both physical and occupational therapists. The most frequently mentioned additional skill for respiratory therapists was EKG by six (16%) respondents and laboratory and emergency skills by five (13%) respondents.

Additional comments. Some additional comments that were made regarding the additional competency preparation model included, "All credentialed personnel should have added supervisory skills, business administration, and budgeting." "All health programs should be developed so laddering **can be** easily facilitated." "Educational programs need to get back to basics and forget high technology, the employers can teach them the high technology if employees are well grounded in the basics." "All credentialed personnel need to have more on geriatrics included in the basic curriculum." "All credentialed personnel need to have a few years experiences in their primary preparation area before additional skills can be added."

Summary

The current use of health personnel as **multiskilled** workers was measured by determining if specialists were assigned to more than one unit intradepartmentally or to more than one department, interdepartmentally.

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The intradepartmental assignments are sometimes classified as cross-training and the interdepartmental assignments as an added competency. All respondents reported they currently were assigning at least one health care specialist to work in several or all units within the department. Ninety-five percent of respondents reported they trained and assigned at least one person from one specialty group interdepartmentally. The small Iowa hospitals are using health specialists as **multiskilled** workers. Registered nurses were the specialty group most frequently assigned **interdepartmentally**. Nurses were assigned to 11 tasks in other departments. Respiratory therapy was the interdepartmental task most frequently assigned to health specialists.

A majority (79%) of the respondents said they would use more and other types of **multiskilled** health workers in the future if they were available. In 38 instances, respondents wanted various health specialists to have an additional **skill** in respiratory therapy. The other most frequency desired interdepartmental assignments were in laboratory (32 assignments), radiography (25 assignments) and physical therapy (23 assignments). Interdepartmental assignments between radiography and laboratory personnel were suggested as well as the combination of physical and occupational therapy. The respondents felt they would use **multiskilled** workers in the future. They were knowledgeable regarding the types of multiple skill preparation models available and the majority could identify the skill mixes they felt would be most valuable in the future.

Recommendations

The purpose of assessing the current use of **multiskilled** health workers was to determine if area colleges should consider revising/developing new programs to meet the changing industry needs. While acknowledging the need

for further investigation to identify specific skills and the necessity to involve other health care agencies, the following recommendations based on data collected in this study should be assessed and prioritized with the assistance of the Iowa Hospital Association:

1. A short term course should be developed to uniformly prepare health specialists for respiratory therapy skills.

2. Specific **competencies** in radiography for laboratory personnel and laboratory skills for radiography personnel should be identified.

3. EKG courses should be offered to health specialists.

4. A short term course for ward clerks should be investigated for nurse aides.

5. Credentialing for additional **competencies** should be developed cooperatively between the area colleges and the health industry.

6. There should be further consideration to assessing the need for a 'rural health worker' including the necessary skills and **credentialing**.

7. Preparatory programs in the area colleges should assess the amount of clinical time that is spent in small hospitals and how graduates are prepared for **roles** in health care delivery in small hospitals.

8. Preparatory programs should introduce the **multiskilled** concept to avoid possible barriers in the work place.

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