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Addressing the Need for Occupational Health Professionals in Agricultural Environments

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Agricultural Occupational Health Nurse Training and Certification: Addressing the Need for Occupational Health Professionals in Agricultural Environments

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SUMMARY. The 1989 report "Agriculture at Risk: A Report to the Nation" called for more trained health professionals to meet the manpower needs for control of occupational health and safety in farming communities. This report indicated the need for 8,000 occupational health nurses in agriculture when there were few trained professionals in this area. Iowa's Center for Agricultural Safety and Health started an agricultural health nurse training program in 1987. As its nurse-directed, hospital-based network of agricultural occupational health clinic programs expanded, and as the Iowa Department of Public Health's Occupational Health Nurse in Agricultural Communities (OHNAC) program grew, a greater need developed for formalized training and certification.

In response, a national working group convened to study the feasibility, curriculum, certification, and delivery mechanisms for such a program. The planning phase produced a "Feasibility and Recommendations" document. A future implementation phase will finalize the curriculum and offer a workshop course featuring a modular curriculum combining distance learning with localized hands-on training. Continuing education credit and certification features will be developed, with possible partial credit towards certification in the American Board of Occupational Health Nurses, and curriculum area recognition in the American Association of Occupational Health Nurses. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-342-9678. E-mail address: getinfo@haworth.com]

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INTRODUCTION

The National Coalition for Agricultural Safety and Health (N-CASH) estimates it takes 8,000 nurses, 1,000 physicians, and at least 500 industrial hygienists to adequately deliver preventive agricultural health and safety services to rural communities.¹ Although the private health care delivery system has generally not practiced preventive medicine, as managed health care evolves, prevention should receive high priority. Agricultural health must be considered in this light and plans be made for appropriate practice of prevention by well-trained medical personnel. Addressing agricultural health and safety problems requires a different approach from the piecemeal and uncoordinated services currently offered by the private health care system, public health services, and the agricultural extension service. It needs a comprehensive approach integrating clinical, educational, and industrial hygiene and safety services; services

similar to those offered by other industries such as automobile or farm equipment manufacturers.

Some hospitals and health care facilities have initiated programs that are called "agricultural health," but in reality many of these programs do not have personnel trained in agricultural occupational health, nor do they address the issues in a comprehensive way. If quality assurance is to be offered to the public, specialty training must be provided and standards established.

Providing occupational health services to the farm community requires a high degree of knowledge and assessment skills that are not available through the regular curriculum of either medicine or nursing. There is a need to understand the sociological and psychological characteristics of the farm population. In addition, there is a need to have a basic understanding of agricultural/economic processes. There is a risk if untrained personnel are presenting these programs: recommendations may be made that are either inappropriate or impractical for the particular region or process involved, or sociologically, psychologically, culturally, or economically unacceptable to the population being addressed. Therefore, the programs could be useless or even harmful, and may drive the agricultural population away from seeking such services in the future.

Presently, typical rural health care services are oriented toward treatment of acute episodic illnesses rather than prevention.² Public health services are generally oriented toward broad-based health problems such as smoking and sexually transmitted diseases. Although land grant college Extension services have diligently delivered safety information to the farm population, research has shown that the farm community is already quite knowledgeable in this area.³ If farm families already know what the major health and safety problems are, then it is apparent that new efforts should concentrate on detecting and removing hazards and devising new methods to encourage safe behaviors.

Like industrial workers, agricultural personnel need accessibility to comprehensive preventive occupational health services. They need nurses and physicians who are knowledgeable about their specific occupational exposures and resulting illnesses and injuries, who are able to make appropriate diagnoses and treatments, and who can make recommendations for hazard assessments, primary prevention programs, and secondary preventive measures. There is also a need for individuals who can go to the farm to conduct on-site health hazard and safety risk assessments and develop plans of risk abatement.

Furthermore, there is a need to institute targeted community-based educational programs aimed at changing risky behaviors. In most areas of

the country, these services are not available. The general health care community has little, if any, training in, or specific knowledge of, agricultural occupational health.² Health care professionals may be interested in the clinical aspects of these diseases, but they seldom have sufficient motivation and training to carry out effective prevention programs.

The nurse could be a key person for delivery of such services. By working with Extension and other community services, nurses have shown their effectiveness in successful agricultural health and safety programs in Sweden⁴ and Finland.⁵ A current program in Iowa effectively employs nurses in directing occupational health programs for farmers.⁶ The Iowa Agricultural Health and Safety Network (IA-HASN) is composed of nine regional hospitals that provide preventive agricultural health and safety services. Nurses trained at The University of Iowa in agricultural occupational health nursing direct these clinics with consultation from a physician who also has received training in agricultural medicine at The University of Iowa. The nurses receive over 100 hours of training in the clinical, epidemiological, and environmental aspects of agricultural illnesses and injuries. They are taught to conduct screening-level industrial hygiene and safety assessments on the farm. The nurses also are trained in the basics of conducting community-based prevention programs.

In addition to private hospital or clinic-based preventive programs, public agencies also could use trained nurses in their agricultural health programs. As the emphasis in agricultural health and safety programs continues from the National Institute for Occupational Safety and Health (NIOSH), the W. K. Kellogg Foundation, and various state and private organizations, specific training for these health professionals becomes more critical.

The successful delivery of agricultural health services requires competent professionals who have general and occupational nursing skills, a firm grasp of public health/preventive medicine, knowledge of farm processes, the sociology of the farm community, and specific medical/nursing knowledge of agricultural illnesses and injuries and their prevention. Nurses need a peer-recognized mechanism of training and certification for public and professional quality assurance, as well as for their own professional development. With managed health care moving forward, it is important that quality preventive agricultural health services be recognized as an essential rural community service. If so defined, these preventive services may be a part of managed care or compensable through insurance plans. Changes in the health care system provide important opportunities to facilitate widespread preventive agricultural health services amongst the agricultural population. The best way to initiate this is to assure that those

who offer such services have the training, and certification to document the nature of the education and skills they have received.

METHODS

Iowa's Center for Agricultural Safety and Health (I-CASH) responded by initiating a process to develop a formal and validated agricultural occupational nurse training course that could be distributed nationally, and for which nurses could receive professional recognition. Support was received from the Iowa Department of Public Health's NIOSH-funded Occupational Health Nurses in Agricultural Communities (OHNAC) program. Funding for a one-year planning process began in the summer of 1995. A national advisory committee for Agricultural Occupational Health Nurse Training and Certification was formed, consisting of 13 health professionals, the majority being nurses (see Table 1). This committee met regularly in person and by teleconference to formulate the methods and goals of the training. The specific aims charged to the committee were as follows:

A. Planning Phase

1. To develop a planning process for training, quality assurance, and formal recognition of expertise in agricultural occupational health nursing.
2. To develop a nationally recognized planning committee.
3. To investigate options and prospects for developing formal recognition of training, specialized knowledge, skills, and competency in agricultural occupational health nursing.
4. To make specific recommendations for a training program, process, and educational materials for agricultural occupational health nurses.
5. To investigate possible pathways to upgrade rural nurses for possible certification in occupational health nursing and agricultural occupational health.

B. Implementing Phase

1. Develop a course and prepare a curriculum or textbook providing the didactic material necessary for clinical nurses, as well as physicians engaged in agricultural occupational health.
2. Hold training workshops for nurses in the public and private sectors who have interest and responsibility in providing occupational health services for agricultural workers.
3. Evaluate the course and educational outcomes.

TABLE 1. Agricultural Occupational Health Nurse Training and Certification Advisory Committee Members

Pam Willard The University of Iowa College of Nursing Iowa City, IA	Roger Chapman Bureau Chief Iowa Dept. of Public Health Des Moines, IA	Janet Ehlers NIOSH Cincinnati, OH
Jean King UI College of Nursing RN-BSN Satellite Program Iowa Lakes Community College Emmetsburg, IA	Susan Randolph Occupational Nursing Head State Dept. of Health Raleigh, NC	Bernie Kuchinski CDC/NIOSH Atlanta, GA
Susan Martin University of Nebraska College of Nursing Scotts Bluff, NE	Carolyn Sheridan AgriSafe Director Spencer Municipal Hospital Spencer, IA	Bonnie Rogers Director, Occupational Health Nursing Program School of Public Health University of North Carolina Chapel Hill, NC
Kelley Donham Dept. of Preventive Medicine The University of Iowa Iowa City, IA	Carol Dupic Iowa Lakes Community College Emmetsburg, IA	Eleanor Chamberlin Chair, Credentialing Committee Harris Corporation Melbourne, FL
Wendy Kuhse OHNAC Garnavillo, IA		

PRELIMINARY WORK

The University of Iowa has offered training in agricultural medicine to health professionals since 1974. It developed the first and only graduate college-credit didactic course in agricultural medicine, which is taught for nurses in community health training, senior medical students, primary care residents, and other health care professionals. This course has helped consolidate the body of knowledge and concepts of agricultural medicine. The content and philosophy of the course was described in a 1982 article on agricultural medicine.²

The authors argued that health care providers are not trained in the issues of occupational risks in farming, yet these risks can account for a significant portion of the health problems of rural residents. They suggested that agricultural medicine, defined as “the anticipation, recognition, environmental assessment, diagnosis, treatment, and community-oriented primary prevention of occupational illness and injuries in the agricultural community,”² is the missing component of rural health. The authors found that a comprehensive approach to prevention is essential to

affect health change in agricultural communities. These types of services facilitate the dissemination of the NIOSH research into applied prevention in agricultural communities.

Further preliminary work in this area is found in the 1983 text entitled *Medical Practice in Rural Communities*.⁷ It was designed as a mini-course that could be inserted in the public health or preventive health curriculum of a medical or nursing curriculum. This book is now out of print, suggesting the need for new materials to help nurses and other rural health care providers practice agricultural medicine.

As previously noted, The University of Iowa initiated a model program in 1987, Iowa's Agricultural Health and Safety Network (IA-HASN), to provide agricultural medicine services to the farming community.⁶ The program's clinics are directed by nurses and have a physician advisor. The training for these nurses includes three components:

1. Instruction in clinical problems from occupational exposure, clinical screenings for well farmers, taking agricultural occupational histories, pulmonary function testing (PFT), cholinesterase and hearing testing, skin cancer screening, and screening for potential back injury.
2. On-site farm environmental hazard assessment.
3. Community- and family-oriented prevention program training.

This training is offered in a series of short courses, emphasizing diagnosis and treatment of agricultural health problems. The training the nurses receive is equivalent to a four-credit-hour college course, requiring approximately 100 hours to complete. To date, 14 nurses have been trained at the advanced level (100 hour course), and in addition, 30 nurses have been trained in the basic level (75 hour course). The physician advisors receive a shorter course emphasizing the medical aspects of agricultural illness.

This preliminary work has established the field of information; however, the details of the materials and audiovisual items remain to be developed more completely and in a more organized fashion. The work to date provides a solid background to proceed with development of more formalized training and certification.

A series of papers on agricultural occupational health issues for nurses adds to the background of information available. The *Journal of Agromedicine* has published four articles that highlight opportunities for nurses in Agricultural Medicine.^{8,9,10,11}

PROGRESS

The plan for a formal agricultural occupational nurse training and certificate/certification program was coordinated by the director of I-CASH.* During the first year of the project, a national planning committee was formed. In addition to addressing the three training objectives listed previously, the committee addressed the following questions:

1. What is the target audience for this training?
2. Should this training be a part of general occupational health nursing certification or can it stand alone?
3. Which professional or public body should be the certifying agency?
4. Should college credit be available for this course?
5. What should be the objectives of the course?
6. What should be the curriculum content?
7. What should be the length and format of the educational materials presented?
8. How should the curriculum development be initiated?

The committee's answers to these eight questions are as follows:

Target Audience

The program is to be targeted at nurses functioning in the capacity of community or occupational health nurses whose practice (at least 25%) consists of serving the farmer, farm family, or agricultural worker. This would include rural primary care nurses in physician offices and emergency rooms, and community health nurses in Iowa's Agricultural Health and Safety Network, public health programs, and similar programs across the country.

Affiliation to General Occupational Health Nurse Training

The committee recognized that there are fundamental skills and information that are common to both general occupational and agricultural health nursing, but that agricultural occupational health nursing is a specialty area with unique knowledge and skills. Therefore, the essential fundamentals of

*I-CASH is a mandated cooperative center involving The University of Iowa, Iowa State University, The Iowa Department of Public Health, and the Iowa Department of Agriculture and Land Stewardship.

general occupational health nursing have been identified and incorporated into a proposed curriculum (see curriculum objectives below).

Certifying Agency and College Credit

The American Association of Occupational Health Nurses (AAOHN) is the specialty organization which establishes standards and scope of practice. AAOHN is currently developing a core curriculum in which thirteen practice-related core areas have been identified. AAOHN has also established a committee to examine issues related to the various components of credentialing, including academic and continuing education, practice levels and certification. After this committee's recommendations have been reviewed by the organization's membership, it is anticipated that the core curriculum will serve as part of the basis for credentialing.

The American Board for Occupational Health Nurses (ABOHN) is the specialty-training certifying body. ABOHN presently offers two levels of certification: COHN (for all occupational health nurses meeting the criteria) and COHN-S (for nurses with a Bachelor's or higher degree). In the future, agricultural health nurse training may become a specialty area and be incorporated into the core curriculum to enable agricultural nurses to benefit from certification as COHNs.

In summary, the steps are (1) to establish agricultural occupational health nursing as a core element in the AAOHN-recognized curriculum, and (2) to gain ABOHN recognition for certification of agricultural health nursing as one component of overall certification. In the interim, there are other processes being pursued to recognize this specialty-training, including certificate, CNE credit, and graduate college credit.

The University of Iowa College of Nursing would be the academic organization to recognize the course work associated with the agricultural occupational health nurse training. This will be accomplished on two fronts:

- Continuing Nursing Education (CNE). The UI College of Nursing is an approved provider of CNE programs and has indicated willingness to support the training. Since many states require CNE for renewal of RN licensure, and will likely accept credit from approved programs in other states, this mode may attract nurses who must earn such credit and are looking for classes in an area of interest that will meet an identified need. In Iowa, one contact hour equates to 0.1 continuing education unit (CEU). For renewal of registration, 4.5 CEU's are required every three years. The basic agricultural occupational health nurse training would fulfill the continuing education units needed for the tri-annual licensure model.

- For RN's pursuing a BSN or MSN degree, the agricultural occupational health nurse training content can be offered as a course by the College of Nursing through the Center for Credit Programs. The number of credit hours would be determined in relationship to the number of didactic and practice hours involved in the training. The course number would be assigned in such a way that it could be taken for undergraduate or graduate credit and could provide some of the elective hours required for the completion of the degree being sought. Through the Center for Credit Programs there is flexibility to utilize a variety of instructional modes to meet the needs of the likely rural and geographically dispersed potential audience for the programs.

Adjunct to continuing education credit or college credit, it is also possible that a certificate from The University of Iowa could be awarded as students complete the various components of agricultural occupational health nurse training. Since the entire program is quite extensive, offering a separate certificate for each component would reward nurses as they complete sections that may be most useful to them.

Course Objectives

The objectives are as listed in the following proposed curriculum. (Contact the authors for a complete copy of this curriculum).

- Unit 1 Rural Health and Agricultural Medicine: An Overview (core)
- Unit 2 Occupational Health Nursing Overview: Applications to Agriculture (core)
- Unit 3 Assessment/Physical Exam (core)
- Unit 4 Individual Health Promotion (core)
- Unit 5 Agricultural Respiratory Diseases (core)
- Unit 6 Agricultural Auditory Alterations (core)
- Unit 7 Agricultural Dermatological Diseases (core)
- Unit 8 Agricultural Musculoskeletal Diseases (core)
- Unit 9 General Health Issues Affecting Numerous Systems (core)
- Unit 10 Agricultural Injuries and Safety Training (core)
- Unit 11 Implementation Plan (optional)
- Unit 12 Overview of Marketing Strategies (optional)
- Unit 13 Agricultural Illness and Injury Control and Prevention (core)

Curriculum Format and Delivery

There will be two components of the training: (1) didactic, and (2) practical/"hands-on" training. The didactic component will be developed for

both on-site and distance learning to make it as accessible as possible to a large audience. The specific delivery modes within a region would depend upon the available technology. Where interactive fiber-optic cable systems are in place, these should be used to provide simultaneous televised instruction for multiple sites. Video cassette, satellite, and microwave systems will also be considered.

The “hands-on” component would be offered in various regions around the country. Collaborating universities or agencies would provide the location and a trained teaching staff would deliver the program. This practical component would include PFT testing, hearing conservation training, and nursing assessment skill (i.e., skin cancer screening).

The committee decided a modular format should be used to increase flexibility so that some participants may be able to “test out” of certain components of the training based on their prior experience and training. Also, this would allow nurses to receive some of the generic training at different sites and times.

During the program implementation phase, planned for 1997-2001, the curriculum will be finalized and the workshop course will be offered. Depending on the work of the planning committee, it is envisioned that such a course will have components of both home study and distance learning, supplemented by a workshop format offered at a central location. The presentation of this course should include nationwide advertisement. Additionally, care will be taken to assure the students receive appropriate background in the fundamental concepts of public health and preventive medicine.

DISCUSSION

There are serious occupational health problems in agriculture. To assure progress is made in prevention and treatment, a wide range of accessible occupational health services with a specific agricultural focus need to be integrated into the general rural health care services. Nurses have been a largely untapped professional resource that has the capability of becoming a major force in preventing agricultural injuries and illnesses.

The model program in agricultural occupational health nurse training developed at The University of Iowa has created interest from across the country in the development of a national certification program. Formalized training is needed for agricultural nurses to achieve public and professional recognition. Similarly, nurses in public health programs and other agricultural occupational projects would benefit from the specific training of such a curriculum. Special recognition for such training in the form of

certification, continuing education, and graduate college credit will help assure quality assurance in services provided in the future.

Work on the implementation phase of this project will continue with proposed support from the NIOSH Great Plains Center for Agricultural Health. The recommendations of the national committee outlined in this paper will be utilized in the actual development of courses, workshops, and certification in agricultural occupational health nurse training.

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