



WEST
VIRGINIA
RURAL HEALTH
RESEARCH CENTER

Agricultural Health Training for Rural America

**Cynthia Persily, PhD; Michael Hendryx, PhD; Johnna Beane BA; Matthew Armistead BS;
Kermit Huebner MD; Kestrel Innes-Wimsatt**

*West Virginia Rural Health Research Center
West Virginia University, Morgantown, WV*

Support for this report was provided by the Office of Rural Health Policy, Health Resources and Services Administration, PHS Grant No. 1 U1CRH10664-01-00.

Additional Information

Please visit our website: <http://publichealth.hsc.wvu.edu/wvrhrc/index.html>



Agricultural Health Training for Rural America Policy Brief

Introduction

Agricultural workers and their families face numerous threats to health and safety. These threats include accident and injury caused by machinery; exposure to pesticides, herbicides, allergens, and dust; stress from long work hours and economic uncertainty; noise pollution; long-term sun exposure; and others. In short, agriculture is one of the most hazardous occupations. Agricultural workers display elevated rates of traumatic death, disabling injury, suicide, and acute and chronic illness.¹⁻³ In 2002 agriculture had an occupational death rate of 21 per 100,000, which was second only to that of mining.⁴ In addition, due to the family structure of farming, lack of regulation, and economic barriers to hiring extra laborers, health risks associated with agricultural work impact many children and seniors, in addition to those between 18-65 years of age.¹⁻⁴

The degree of diversity, severity, and prevalence of health problems associated with agricultural work necessitate the training of health care professionals working in rural areas to address these health problems. Training focusing on how to identify and treat such disorders and educate patients about prevention will enhance primary care services for agriculture workers. However, a survey of primary care physicians revealed scant knowledge of the health risks associated with agriculture.⁵ Rural areas (in which agricultural work is most common) are already currently experiencing shortages of health care professionals.⁶ U.S. farm workers display low rates of health care utilization.⁷ In addition, research suggests that nursing students and faculty display increased interest in agricultural topics when exposed to them in the classroom.⁸ It thus seems likely that agricultural health components in the curriculum of health care practitioners promote not only preparedness to serve agricultural workers, but also engagement with this population. Comprehensive information on the extent to which health care professionals receive training in agricultural health is not available. This study locates agricultural health programs and courses and describes collaborations that exist between clinicians and agriculture-related agencies. Information from the study may be used to improve rural training programs for health care professionals providing primary care to agriculture workers.

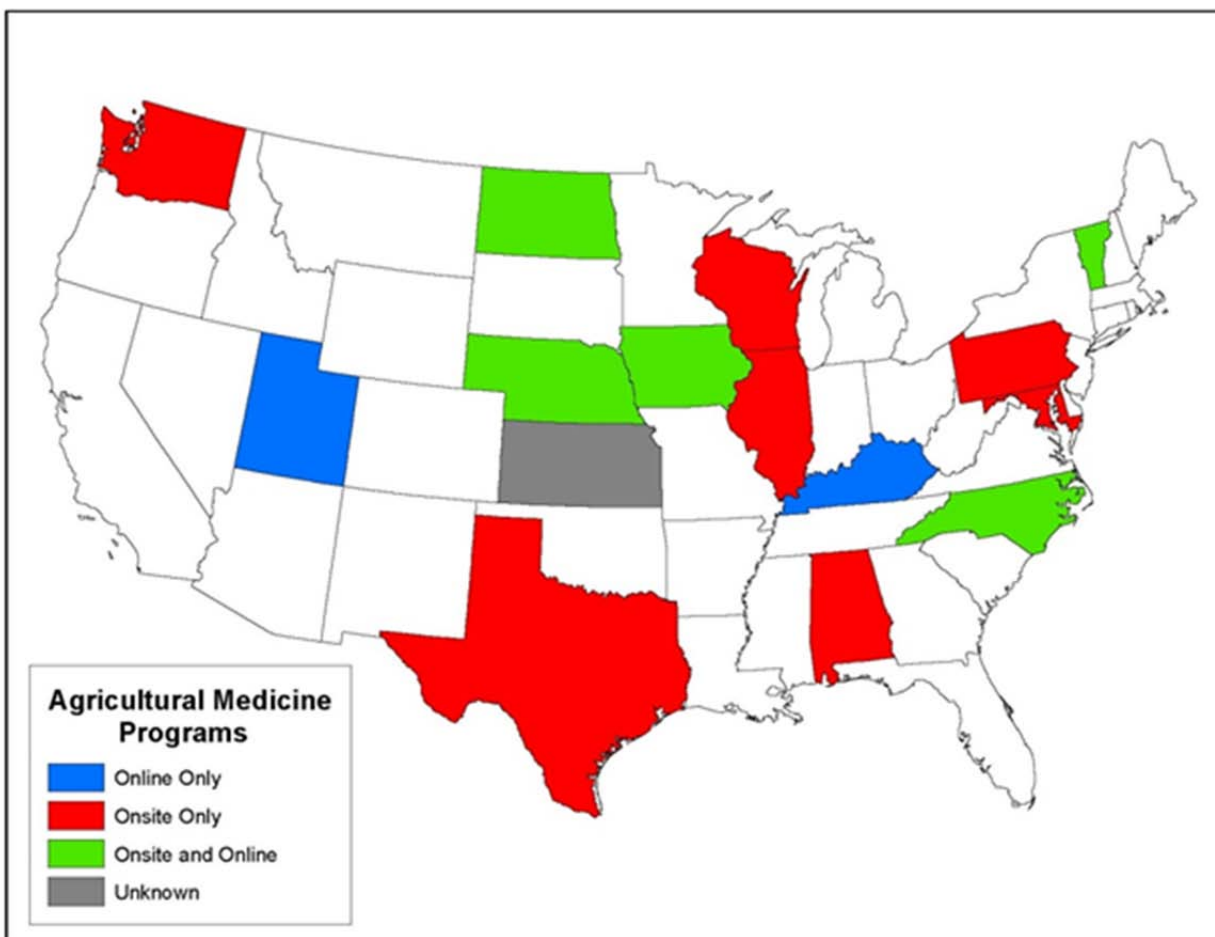
Methods

We conducted a systematic literature review for published papers and a search of Internet sites on topics related to agricultural health training and education. All training programs in agricultural health were evaluated for appropriateness for inclusion in a database of training programs, using criteria determined for this project and delineated in the full report found on our website at <http://publichealth.hsc.wvu.edu/wvrhrc/index.html>. Working with the AgriSafe Network consortium, we identified key informants from the agricultural health and primary care fields to participate in interviews to answer questions related to existing collaborations between clinicians and agriculture related agencies.

Results

A state by state analysis of agricultural health training programs was undertaken. We found 61 programs in the US. Fifteen states offer a variety of agricultural health related programs or courses, some onsite, and some offered online. In addition, some programs are offered completely online. A full spreadsheet including sponsor, topic, targeted provider type, type of credit for attendance (continuing education (CE) or college/university credit), program objectives and other interesting details about programs is found on the Center's website at <http://publichealth.hsc.wvu.edu/wvrhrc/projects/2012/agmedicine/>. **Figure 1** demonstrates the type of program (onsite or online) by state. *This analysis should be interpreted with caution, as many programs are available online, and thus are theoretically available to providers across the country.* We noted no states that limited enrollment in online programs to providers from particular states.

Figure 1: Type of Program by State



Additional figures which include programs offered by provider type are available in the full report found on our website at <http://publichealth.hsc.wvu.edu/wvrhrc/index.html>.

To analyze the collaboration between clinicians and the agriculture related agencies, we invited 25 individuals for inclusion in a key informant sample. We obtained consent from 9 individuals to participate in an interview to share their perspectives on collaborative relationships between the agriculture community and primary care providers. The intent of the interviews was to provide a snapshot of relationships across the country that could be used as examples and provide lessons to improve agricultural health services. Interviewees reported frequent interactions between agricultural health and provider partners. Interviewees were asked to rate the working relationship with either primary care providers (for agriculture representatives) or agricultural agency personnel (for clinicians) using a 4 point scale ranging from excellent to poor. Overall, the relationships were positive with 78% indicating their relationships were excellent and the remaining 22% indicating good.

All of the key informants reported similar benefits that result from collaborations between clinicians and agricultural agency personnel. The opportunity to provide better health care for people in agriculture occupations was a recurring theme. Improved health care services, education and improved competencies of providers were all noted as positive results from the ongoing relationships. Several interviewees specifically mentioned improved preventative care, as well as increased regular communication that does not typically occur between agricultural and clinical occupations.

In an attempt to assess examples of how collaboration is working well, we asked informants about effective models of collaboration that they have seen in their area or other areas of the country. Common themes in these programs include models that train and position primary health care providers to provide preventive and treatment services wherever agricultural workers are, and wherever access to providers is convenient to workers, as well as to provide agricultural health education in ways that are convenient for primary care providers.

Overall, we found that areas in need of improvement include (1) provision of additional continuing education for practicing physicians, registered nurses (RNs), physician assistants (PAs), and nurse practitioners (NPs); (2) provision of time and funding for primary care providers for continuing education in agricultural health related topics, (3) evaluation of methods to adjust the health care delivery model to the needs of the agriculture community, and (4) enhancement of linkages and coordination of activities between health care professionals and public agencies in occupational and agricultural domains.

Policy and Market Implications

Results support the need for improved and increased availability of continuing training education specializing in agricultural health. Policy options as well as market enterprises that could be supported by data from this study include:

1. A potential need exists for increased training and education opportunities for primary care and specialty providers, particularly those who serve rural agriculture communities. An understanding of the unique culture, as well as illnesses, injuries, and symptoms that farm workers may exhibit is essential to provision of high quality care to this population. Training programs can be developed online, allowing improved access by the rural primary care clinician population, who are less likely to be able to leave their practices to attend onsite programming. Online programs can also enhance knowledge of other providers regardless of their practice location, who

- may receive agricultural workers on a referral basis, and must understand the unique needs of this population.
2. Mechanisms can be developed to increase the awareness of existing resources and tools, such as those available from the Agri-Safe Network and the Migrant Clinicians Network as well as other continuing education opportunities, so that rural primary care providers may gain a better understanding of agricultural medicine/health issues. The Rural Assistance Clearinghouse (RAC) may be considered as a mechanism for broad dissemination of existing resources and tools for agricultural health education to rural clinicians.
 3. Integration of occupation-specific information related to agricultural health can be included in electronic medical records in rural primary care settings in agriculture communities. Provision of decision support tools for assessment, diagnosis, and treatment of agricultural industry related health problems may also serve as an education vehicle for primary care providers.
 4. Methods to incentivize continuing education to increase agriculture health knowledge for primary care providers in rural agriculture communities can be considered. Some states have imposed required continuing education associated with licensure renewal for health professionals for common health issues, such as end of life and palliative care. States with a high population of agriculture industry workers may consider similar regulatory requirements for agricultural health education for licensed providers.
 5. Strengthening partnerships between agriculture related agencies and associations concerned with rural health can help to increase the focus on agricultural health education in rural primary care.

CONCLUSIONS

The degree of diversity, severity, and prevalence of health problems associated with agricultural work necessitate the training of health care professionals working in rural areas to address these health problems. Availability of training focusing on how to identify and treat such disorders and educate patients about prevention will enhance primary care services for agriculture workers. While some training is available, future efforts at increasing availability and accessibility of agricultural health education for rural primary care providers is clearly warranted. Emerging models of care can be used as best practice models to improve care for rural farm workers. Strengthening linkages between agriculture related agencies and rural care organizations can further serve to improve the focus of agricultural health issues in rural primary care.

LITERATURE CITATIONS

1. Von Essen SG, McCurdy SA. Health and safety risks in production agriculture. *West J Med.* 1998;169(4):214-220.
2. Reed DB. The risky business of production agriculture: health and safety for farm workers. *AAOHN J.* 2004;52(9):401-409.

Agricultural Health Training for Rural America

Policy Brief

February 2013

3. Spurzem JR, Romberger DJ, Von Essen S,G. Agricultural lung disease. *Clin Chest Med.* 2002;23(4):795-810.
4. Peek-Asa C, Zwierling C, Stallones L. Acute Traumatic Injuries in Rural Populations. *Am J Public Health.* 2004;94(10):1689-1693.
5. Prince TS, Westneat S. Perceptions and behaviors of primary care physicians regarding farmers' occupational exposures and health. *Journal of Agromedicine.* 2001;7(3):79-88.
6. Smallfield S, Anderson AJ. Addressing agricultural issues in health care education: An occupational therapy curriculum program description. *Journal of Rural Health.* 2008;24(4):369-74.
7. Quandt SA, Clark HM, Rao P, Arcury TA. Oral health of children and adults in Latino migrant and seasonal farmworker families. *Journal of Immigrant and Minority Health.* 2007;9(3):229-35.
8. Reed DB, Goffman C, Westneat SC. Nurses' agricultural education in the southeastern United States. *Journal of Nursing Education.* 2005;44(6):271-6.

Additional Information

Please visit our website: <http://publichealth.hsc.wvu.edu/wvrhrc/index.html>