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BRIEF REPORT

A Brief Report Describing the Union of Medical Training and Agricultural Health

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ABSTRACT

This brief report describes a mutually beneficial partnership forged to extend agricultural medicine training to physicians, nurses, veterinarians, public health workers, health care professionals, medical residents, and students. *Agricultural Medicine: Occupational and Environmental Health for Rural Health Professionals* originated at the University of Iowa, Iowa's Center for Agricultural Safety and Health, and the Great Plains Center for Agricultural Health. Through a National Institute for Occupational Safety and Health (NIOSH)-funded Training Project Grant, The University of Texas Health Northeast worked with the University of Iowa and regional experts to adapt the agricultural medicine content for the southwestern United States. Further partnerships were developed with the Southwest Center for Agricultural Health, Injury Prevention and Education, The University of North Texas Health Science Center College of Osteopathic Medicine, and the Texas Rural Health Association to extend the reach of this training to other important stakeholders. Each of the collaborators offered unique resources to the coordination of the agricultural medicine course. Likewise, each organization benefited from extending regionally relevant agricultural medicine training to current and future health care providers. The long-term goal for the partnership is to train a broad array of health care providers with the basics of anticipation, recognition, diagnosis, treatment, and the prevention of occupational and environmental illnesses and injuries within rural and agricultural communities, customized to the Southwest Region. This brief descriptive report highlights the process by which strategic partners collaborated to conduct a regional agricultural medicine course, such that other organizations interested in offering a similar training might gain insight to best practices from our experience.

KEYWORDS

Agricultural; building capacity; collaboration; medicine; occupational; partners; rural

Introduction

Agricultural medicine includes “the anticipation, recognition, diagnosis, treatment, prevention, and community health aspects of health problems peculiar to agricultural populations.”¹ This specific field of practice is important because agricultural workers face unique workplace challenges that can lead to unique illnesses and injuries.^{1–7} Agricultural producers often work long hours in hazardous environments. They are exposed to extreme temperatures and weather conditions, as well as dangerous chemicals and heavy machinery. Farms are also frequently located on the same land as the home, posing unique risks for children.^{2,5} According to the 2013 Bureau of Labor Statistics, US workers in agriculture (farming), fishing, and forestry (AFF) occupations had a fatal work injury rate of 23.1, compared with the all-worker fatal

injury rate of 3.2.⁸ Similarly, workers in AFF experienced a higher incidence rate of nonfatal occupational injuries than the all-industry average.⁹ It is widely believed that fatal and non-fatal injuries and illnesses within the AFF sector are underreported, because the statistics do not capture incidents that occur on operations with fewer than 11 employees.

Professionals who provide health care services in rural and agricultural settings need specialized training to effectively respond to the injuries and illnesses that occur to their patients.¹⁰ In the 1970s, faculty at the University of Iowa, including Kelley Donham, DVM, recognized that agricultural medicine training was scarce. Dr. Donham and his colleagues founded a training program that was later transformed into a graduate course and a 40-hour continuing education course. Jeffrey

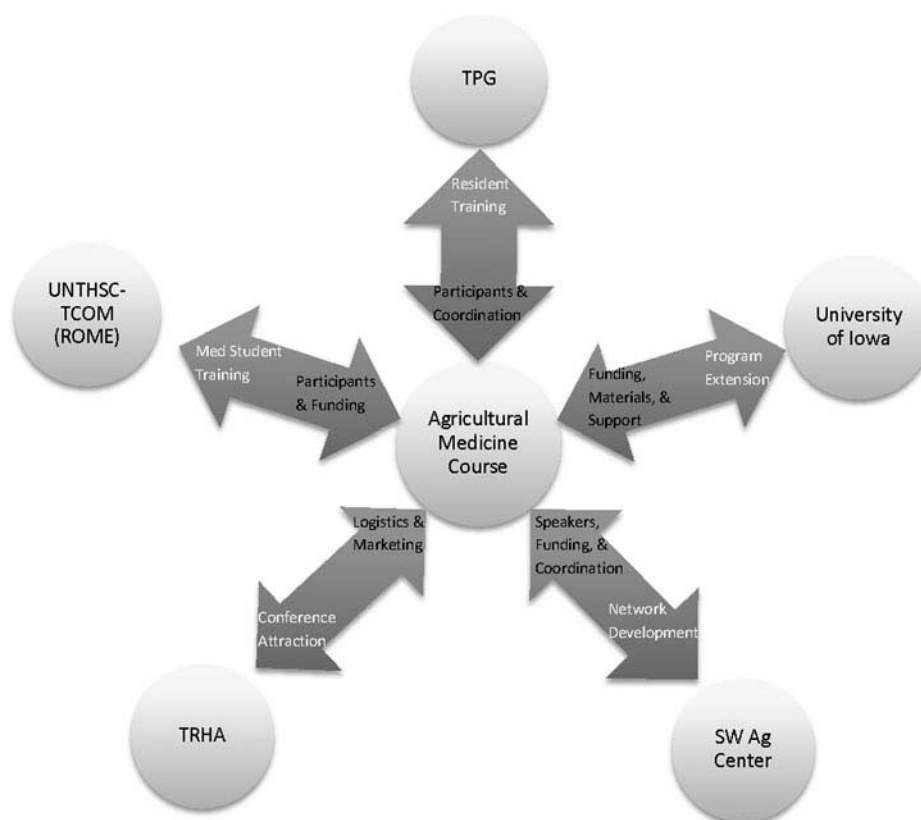


Figure 1. Summary of the contributions of each of the agricultural medicine strategic partners.

Levin, MD, MSPH, at The University of Texas Health Northeast (UT Health Northeast) also recognized the value in training medical residents in agricultural medicine. A National Institute for Occupational Safety and Health (NIOSH)-funded Training Project Grant (TPG) awarded to UT Health Northeast has helped to prepare occupational medicine resident physicians to enter independent practice with an emphasis on the occupational health needs of rural and agricultural workers. As part of the TPG, occupational medicine residents at UT Health Northeast were enrolled in the 40-hour course offered by the University of Iowa. The agricultural medicine course in Iowa included a range of significant instructional topics in agricultural medicine important to a broader range of health care professionals in the Southwest.

To bring this training to the Southwest Region, UT Health Northeast applied for a grant from the University of Iowa to conduct a regional agricultural medicine course. To maximize the success of reaching a sizable and diverse group of health care providers, a set of strategic partners was organized to plan

and coordinate a 4-day course delivered over 2 years. These partners included the University of Iowa Building Capacity Project; TPG personnel from UT Health Northeast; the Southwest Center for Agricultural Health, Injury Prevention and Education (SW Ag Center); The University of North Texas Health Science Center College of Osteopathic Medicine (UNTHSC-TCOM); and the Texas Rural Health Association (TRHA). John Bowling, DO, is the Assistant Dean for Rural Medical Education/Professor and the Director of the Rural Osteopathic Medical Education (ROME) program at UNTHSC-TCOM. Dr. Bowling is also the current President of the TRHA. The agricultural medicine course content and ROME curriculum address many of the same topics, therefore presenting an opportunity for synergy and efficiency.¹¹ The contributions of each of the agricultural medicine strategic partners are illustrated graphically in Figure 1.

The purpose of this brief descriptive report is to highlight the process by which strategic partners collaborated to conduct an agricultural medicine course in the Southwest, such that others might

gain insight to best practices from this experience, particularly for reaching a diverse group of relevant health care professionals.

Methods

To take advantage of the valuable contributions offered by each of the strategic partners, Dr. Bowling hosted an in-person meeting in Fort Worth in January 2014. Dr. Levin described the importance of the agricultural medicine course and how each partner could benefit from a collaborative approach. Each organization then described their respective goals and what resources they could offer to aid in the coordination of a regional course.

TPG staff at UT Health Northeast provided overall course coordination, meeting management, and marketing. Four residents receiving support from the TPG were required to attend the agricultural medicine course as part of their training. Applications were submitted and approved for continuing medical education (CME) for both allopathic and osteopathic physicians, continuing nursing education (CNE) for nurses, and continuing education (CE) for veterinarians.

SW Ag Center staff helped to coordinate the course, identify content experts, and conduct the marketing strategy. Center staff circulated information through online marketing tools, e-mail, and postal mail. Appropriate health care associations were contacted directly by phone to extend coverage to their Web sites and event calendars. The center also worked with speakers to adapt the course materials to be regionally relevant. Funding for speaker travel was provided by the SW Ag Center.

UNTHSC-TCOM contributed three key elements to the course: participants, funding through registration fees, and the TRHA connection. Students enrolled in the ROME program (about 30) were required to attend the agricultural medicine course. Students' course registration fees were paid for by the ROME program. Dr. Bowling also recognized an opportunity to align the agricultural medicine course with the TRHA annual conference.

The TRHA board members viewed the course and the partnership favorably. They committed to

hosting the course within their annual conference over a 2-day period for 2 consecutive years. TRHA provided a dedicated Web site to collect agricultural medicine course registrations. They also provided course meeting space and setup, catering coordination, signage, name tags, audio visual equipment, and marketing.

The University of Iowa provided grant support, training materials, and coordination counsel. The University of Iowa, Iowa's Center for Agricultural Safety and Health, and the Great Plains Center for Agricultural Health contributed vetted content materials and extensive professional development for speakers through a formal orientation process. Dr. Donham also traveled to Texas to deliver portions of the course and to serve as a keynote speaker at the TRHA conference.

Results

More than 30 ROME students and 4 occupational medicine residents (TPG-funded) gained exposure to health issues peculiar to workers and families from rural and agricultural communities in the southwest. In addition to the residents and students, six individuals from diverse backgrounds attended the course. Those attendees included a pediatric cardiologist, nurse, extension specialist, Farm Bureau representative, professor of nursing, and an assistant professor of occupational health sciences. Three of these individuals were investigating the possibility of organizing similar courses in their home states (New Mexico, Arkansas, and Louisiana). TRHA added valuable content to their existing conference program that has the potential to increase and expand the target audience for their annual conference. The SW Ag Center broadened its network of strategic partners, a key tenet of its mission. Finally, the University of Iowa extended the reach of its agricultural medicine course.

Through strategic collaboration, agricultural medicine training was offered to 40 participants in 2014. Pre/posttests revealed a 38% improvement in participant content knowledge scores. Over 70% of participants indicated that they intended to use materials provided by the agricultural medicine course in their work or practice within the next 6 months. The next agricultural medicine course

(Part II) is planned for October 2015. The recruitment of physicians, nurses, and other practicing health care providers to the course proved challenging. Providers from rural areas are often short staffed and may be unable to travel for continuing education due to busy practices. Most hospitals offer continuing education opportunities for their faculty and staff either through local presentations or webinars. However, there are other rural health advocates that can benefit from the course content. In 2015, Community Health Workers (CHWs), Area Health Education Center (AHEC) staff, and extension specialists will be targeted for course recruitment. CHWs and AHEC personnel have historically attended the TRHA conference and require continuing education credits. Extension specialists have direct access to agricultural producers and rural communities. The course information could be used in the development of extension outreach programs related to health. Moreover, local Farm Bureau has contemplated sponsorship for a community physician or other provider to attend the course. Evaluation data collected in 2014 and 2015 will elucidate the impact of the course on health professionals in the Southwest Region.

Conclusions

Two important outcomes have resulted from this effort. The first outcome has been the extension of agricultural medicine training to the southwest that incorporates fundamental topics to the field, customized to the unique circumstances of agricultural production populations in the region. The second outcome has been the development of a training initiative that is both sustainable and can reach a sizeable target audience, by forming a collaboration of strategic partners with established networks of relevant stakeholders. The ROME program and occupational medicine residency at UT Health Northeast have new students/residents each year providing sustainability for the course, at the very least for these groups that contribute significantly to the rural and occupational health care workforce, respectively. Marketing to

additional audiences has the potential to broaden and diversify the reach of rural and agricultural health-related messages. These are construed as best practices for replicating similar agricultural medicine training initiatives in other regions.

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