

Environmental Workforce Characteristics In the Rural Public Health Sector



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Introduction

Environmental risks to rural populations are understudied relative to urban areas despite increasing recognition that rural populations are potentially exposed to these risks from agricultural, mining, industrial or other sources. These environmental risks and associated health problems carry corresponding implications for public health programs and services, and highlight the need for a rural public health workforce that includes appropriate environmental health specialists. However, documentation exists that the environmental workforce in rural areas is underdeveloped.

This project analyzed the environmental workforce characteristics of the rural public health sector to inform policy relative to coordination of rural environmental health services.

Methods

The study incorporated survey approaches with analysis of existing secondary data sources to characterize the environmental public health workforce in rural and urban settings.

The aims of this study were to 1) determine the number and qualifications of environmental specialists employed in rural (RUCA codes 4 and higher) versus urban public health settings (RUCA codes 1 through 3), 2) analyze environmental public

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health workforce capacity in rural versus urban settings, and 3) analyze collaboration (working together to achieve a goal) and coordination (maintenance of an effective relationship) between public health and environmental protection professionals at both state and local levels.

Existing data were analyzed for Aim 1. This analysis included the National Association for County and City Health Officials (NACCHO) survey of local health departments, conducted most recently in 2008.

The Center also interviewed selected district and local public health agency representatives in 26 states. The agencies were selected to assure representation of the 6 jurisdictional models including City; County; City/County; Town/Township; Multi-county, district, region; and other which represent different relationships between the State and local public health agencies. In addition, sites were selected based on census region and number of constituents served. Chief Executive Officers/Directors from selected jurisdictions were emailed an introductory letter from the Deputy Director of the West Virginia Rural Health Research Center to explain the study and request participation in a telephone research interview by a member of their agency. The research interview was conducted by an experienced research team member using a prepared script. A total of 51 interviews were completed.

Interviews included questions about general environmental issues in the state, severity of these issues for rural areas, current and anticipated workforce issues and needs, and perceptions of coordination and collaboration between local health departments and environmental protection agencies. Interview analysis involved identification and description of trends in responses and was carried out by the research team.

Results

Rural health departments were significantly less likely than their urban counterparts to employ environmental health specialists (sanitarians) (74.7% rural vs. 88.5% urban, $p < .001$), other environmental health scientists or technicians (18.1% rural vs. 39.4% urban, $p < .001$), and health educators (50.8% rural vs. 62.2% urban, $p < .001$). Rural health departments were also less likely to employ epidemiologists (11.3% rural vs. 39.1% urban, $p < .001$). Rural health departments employ significantly more registered nurses than their urban counterparts (96.9% rural vs. 89.1% urban, $p < .001$). Additionally, rural health departments are less likely to offer key environmental services than their urban counterparts, including key environmental surveillance, regulation, inspection, and licensing services ($p < .001$). Interview case studies revealed that the general environmental health issues of water quality, sewage, food safety, air quality, nuisance issues such as bed bugs, animal bites and rabies threats, and administrative and funding issues relative to environmental health service delivery were perceived by a

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majority of interviewees (68.9%) to be more pressing in rural areas. Economic conditions, hiring freezes and subsequent increased workloads were identified by a majority of interviewees (60.8%) to have impacted the ability of health departments to meet their environmental protection mission.

Policy Implications

Health care policy changes are needed to meet workforce needs to address evolving environmental health issues in rural settings. Policies and programs designed to fill gaps in the environmental workforce can have a significant impact on the health of rural communities. Policy implications that have emerged from this study include the following:

1. Isolated rural environmental health departments could be further integrated into local, regional, and state level public health systems to increase their success. Fragmentation leads to challenges for environmental health workers. Partnerships can be established to advocate for environmental health services in rural areas by demonstrating the value of these services to the health of rural communities. The emergence of regional expertise in emerging environmental health issues may be capitalized upon, developing regional Centers of Excellence in particular environmental hazards. Regulatory and policy barriers to innovation may be evaluated and removed.
2. Model environmental health departments within a variety of jurisdictional types of public health agencies can be evaluated for best practices.
3. Emerging models of care may be evaluated for their efficacy in enhancing rural environmental health services. For instance, dense social networks, a strong belief in self-help, and shared life experiences may position rural areas well for the use of a community health worker or “promotora” model for identifying environmental risks and linking citizens to appropriate resources.
4. Efforts may be directed at evaluating the demand and need for fully qualified environmental health workers in rural areas. Rigorously derived workforce formulas to determine the demand for particular classifications of environmental health workers on a per capita basis may be a helpful guide for local health departments. If rural health departments must rely on the registered nurse workforce for provision of many environmental health services, efforts can be made to enhance environmental health training in nursing curricula. Through appropriate curricular development, non-public health professionals and clinicians could be trained to provide the necessary rural environmental health

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services not currently available. However, the workforce implications for an already stretched rural public health workforce must be considered.

5. The environmental health education pipeline and continued professional education opportunities could be evaluated based on estimates of future anticipated need. Workforce development programs in public health may consider inclusion of the environmental health workforce as a particular area of emphasis.
6. Environmental regulation can be evaluated for its impact on the rural environmental health workforce. Additional competencies for emerging environmental health problems may require further training of the workforce. Increased inspections, additional reporting responsibilities, and subsequently increased workforce costs could be evaluated.

Conclusion

Elevated adjusted mortality rates in rural areas in association with a variety of potential environmental sources carries important policy implications regarding the need for increased environmental monitoring and improved standards. Protecting the public against environmental hazards is one of the six specific functions of public health. Improved knowledge of environmental health workforce capacity, distribution, and potential needs or shortages in public health settings across the rural-urban continuum has implications for informing improved coordination of public health practice with environmental protection. Integration of rural environmental health services into local, regional and state public health systems is necessary to improve the health of the population. Unique models for rural environmental health and model public health programs provide opportunities for innovative partnerships and care delivery. Public policy can support the development of an environmental health workforce to meet the future needs of rural populations.

Additional Information

See the Full Report that corresponds to this Brief for more detailed methods and findings from this study at: <http://wvrhrc.hsc.wvu.edu/projects>

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