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Key Environmental Health Competencies for Rural Primary Care Providers: Executive Summary and Competency Guide

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Executive Summary

Background: Providing health care that considers environmental determinants of health, environmental impact on health, and outcomes attributed to environmental issues is complex due to the need for providers to be competent not only in social and health sciences, but also in environmental health concepts. Primary health care providers in rural communities must be able to assess community environmental needs, perform problem analysis, program planning and implementation, and develop evaluation strategies. However, few primary health care providers are trained in environmental health conditions and history taking, even though poor environmental quality is estimated to be directly responsible for a proportion of preventable ill health in the world. The integration of environmental health competencies into current and future entry level and professional continuing education programs for rural primary care providers will be an essential policy direction. National organizations which delineate basic practice competencies should specifically include environmental health competencies in entry level rural primary care education programs. Health issues related to environmental exposures and hazards may have nonspecific symptoms or manifest themselves as common health problems, making environmental competency vital for correct diagnosis, referral and intervention. While the degree of involvement of the rural primary care provider in environmental health issues is recognized to depend on the local community, the severity of the environmental issue, their degree of expertise and investment, the purpose of this study was to develop a set of basic environmental health competencies that are needed by all rural primary care providers.

Methods: The development of key environmental health competencies for rural primary care providers was undertaken systematically, first through a review of discipline specific competencies developed by a variety of entities including departments of environmental and public health,

professional organizations, education organizations, and others. Numerous sources were obtained through searches in a variety of databases and various mesh terms. Investigators used a rigorous process for reviewing all the potentially relevant abstracts using the formal study inclusion/exclusion criteria. After full evaluation of all selected papers, items of interest extracted were competencies from the health care disciplines including medicine, nursing, epidemiology, environmental and occupational medicine, and public health.

In March of 2009, a consensus conference was held in Washington, D.C. with 10 key experts from environmental health, public health, rural health, and specific key primary care disciplines to develop the *Key Environmental Competencies for Rural Primary Care Providers* guide. Invitees represented various organizations in rural health, environmental health, and primary care practice and education. The participating organizations included:

- American Academy of Family Physicians
- American Academy of Nurse Practitioners
- American Academy of Physician Assistants
- American Association of Colleges of Nursing
- Centers for Disease Control and Prevention/Agency for Toxic Substances & Disease Registry
- Centers for Disease Control and Prevention/National Center for Environmental Health/Environmental Services Branch
- Centers for Disease Control and Prevention/National Center for Health Statistics
- National Association of Local Boards of Health
- National Environmental Health Association
- National Rural Health Association

Experts agreed that their vision was "*rural primary care providers are competent partners in helping to heal the Earth and its people*" and that their mission was "*to develop a draft set of environmental health competencies for rural primary care providers*" for future testing. A framework for organization of competencies, based on a primary care framework, was adopted by the group to organize the competencies. The experts agreed upon some common definitions (compiled from a number of sources)

of terms to guide their work. A draft of the competency guide emerged at the end of this consensus conference. Additional meetings were convened using electronic mail and teleconferencing technology to resolve minor outstanding issues in the guide development.

Next, the competency guide items were tested for clarity, content validity and applicability. We used a web based survey process to validate the competency guide. Working with national organizations and associations, we released a survey to stakeholders using email blasts, newsletters, our website, and social networking media. The survey provided background on the study, the definitions developed through the consensus process, and the competency document. Each competency was able to be viewed in the document and respondents were asked to respond to questions about item clarity, content validity and applicability. To analyze the clarity, content validity, and applicability of each item in the competency guide, ratings were evaluated for percentage agreement among the respondents. The refined guide, along with the agreement statistics and comments, were then reviewed by the experts from Phase One of the study prior to dissemination. A refined competency guide is found in this report.

Policy Implications: The integration of the key environmental health competencies into current and future entry level and professional continuing education programs for rural primary care providers will be an essential policy direction. National organizations which delineate basic practice competencies should consider adopting the results of this work for inclusion in entry level rural primary care education programs. Bodies that provide accreditation to programs preparing rural primary care providers may chose to reflect these competencies as essential elements of those training programs. Professional organizations that support rural primary care can contribute to the development of these competencies in the workforce through integration of the competencies into future professional education programs. Our Center plans to use the competencies to develop a web based guide of available resources to aid in the development of these competencies in rural primary care providers. In the future, it is our vision to

develop a series of interactive regional maps linking environmental risks to geographic regions and provider resources available relative to those risks.

Future Research: Future studies will use the competency guide to develop and test provider education programs in discipline-specific or interdisciplinary programs in rural settings. Future studies may also analyze the relationship between the use of these competencies in rural health education, practice, and service delivery and health outcomes in rural areas.

The full report for this study will be available on the WV Rural Health Research Center website when approved by HRSA Office of Rural Health Policy.

Table 1: Definitions for terms found in the *Key Environmental Health Competencies for Rural Primary Care Providers* guide*

Assessment: the systematic and continuous collection, validation and selection of data from a variety of sources.
Collaboration: a process where two or more people or organizations work together toward an intersection of common goals by sharing knowledge, learning and building consensus. Collaboration is the process of various individuals, groups, or systems working together but at a significantly higher degree than through coordination or cooperation.
Community: the geographical area served with consideration given to social, cultural, economic, and political populations.
Diagnosis: the identification or determination of the nature and cause of a disease or injury.
Environmental competence: the ability of both public and private health providers and policymakers to be sensitive and appropriately responsive to the constellation of physical, social, and economic environments in which patients and populations live.
Environmental health literacy: the ability of an individual to access, understand, and use environmental health-related information and services to make appropriate health decisions.
Environmental health resources: sources of environmental health information, support or aid that can be readily drawn upon when needed, including but not limited to education programs, materials, data, and human expertise. Examples may include local health departments, water testing services, community assessment data, etc.
Environmental health variations: health patterns or aberrations (examples include illness or injuries) in a clinical presentation that may be attributed to the environment.
Environmental literacy: the range of knowledge, skills and abilities that enable people to understand the information needed to lessen environmental risk and take positive corrective actions.
Environmental reality: recognition that where a patient lives and works (city, county, mountains, etc.) as well as culture and lifestyle may affect the practical implementation and follow-up of such health care.
Environmental risk communication: the ability of health professionals to communicate with those they serve, so they hear, understand, embrace, and put into action the information and science providers share with them, so they will make good choices for their health and safety.
Evaluation: the measurement of plan goals and expected results.
Health care delivery systems: a continuum of care made up of collaborations and partnerships strategically in place by intentional design. Members may include: Hospitals, PCP's, Specialty care, EMS/first responders, Long Term Care/Assisted living, Educational institutions, Communities, Hospice, Public Health, Other partners (NIOSH, EPA, CDC, etc), Mental Health, Dental Care, Public Works, Environmental Health.
Infrastructure: the basic structure, capital, or features of a system or organization needed for the functioning or the services and facilities necessary for a community, society, or economy to function and that have a direct impact to the quality of life
Individuals/Patients: participants in the health care system for the purpose of receiving therapeutic, diagnostic, or preventive procedures who for the purpose of this project are considered to include individuals, family, significant others, friends as a unit who will benefit from environmentally competent care by rural primary care providers.
Management/Intervention: the development and implementation of the plan of care based on specific diagnoses or identified needs.
Rural primary care provider: a practitioner who sees people for common health problems, to provide

preventive care and teach healthy lifestyle choices; identify and treat common medical conditions; assess the urgency of health problems and make referrals to specialists when necessary. For the purpose of this work, rural primary care providers include physicians, nurse practitioners and physician assistants.

Rural environmental risk: human-made or natural features of the rural landscape that expose rural populations to health risks. Areas of the environment considered to impact health include the built environment, food, air, water, land use, and waste water. These features may include direct pollution sources but may also include aspects of the larger social, economic or built environment that differentially place some portions of the rural population at greater risk than others. The combination of exposure to environmental contaminants and place-based stressors such as socioeconomic hardship increase the risk for poor health outcomes.

**compiled from a variety of sources*

Final "Key Environmental Health Competencies for Rural Primary Care Providers" guide

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Assessment: **The systematic and continuous collection, validation and selection of data from a variety of sources.**	1. Integrate environmental health questions into a comprehensive history-social history/review of systems. 2. Recognize individual health variations attributable to the environment. 3. Recognize the importance of PCP role in first discovery of health issues that may be linked to the environment. 4. Know how and where to access information/data or personnel resources related to environmental hazards and health. 5. Analyze information provided by resources in order to develop differential diagnoses and plan. 6. Possess an awareness of individual's occupational/environmental risks. 7. Possess an awareness of cultural influences into an individual's environmental risks.	1. Obtain environmental assessment data at the community level in rural areas. 2. Develop an awareness of environmental resources (including local, county, state federal and tribal) to provide relevant information when needed to improve rural health. 3. Use information technology to access data as needed relative to environmental risk in rural communities. 4. Possess an awareness of community environmental health risks and infrastructure.	1. Identify current health care delivery systems resources (including information technology and other expert sources) to gain environmental literacy. 2. Recognize health variations that may be attributed to the environment that require collaborations with public health and others.

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Diagnosis: **The identification or determination of the nature and cause of a disease or injury.**	1. Use individual environmental data to aid in diagnosis of disease, conditions, and health problems in rural primary care patients a. Occupational b. Recreational c. Social d. Home e. Community (e.g., air, water) 2. Utilize/mobilize resources for confirmation, consultation, and/or referrals as necessary.	1. Use community, local, state, federal and tribal level environmental data to aid in diagnoses in rural primary care. 2. Use relevant environmental, occupational, and clinical data, expertise, evidence and resources (including community, local, state, federal and tribal) to aid in diagnosis of disease, conditions and health problems to improve rural community health.	1. Collaborate with health care delivery systems resources/partners to make best diagnosis of environmental health issues.

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Management/Intervention: **The development and implementation of the plan of care based on specific diagnoses or identified needs.**	1. Ensure reporting of known or suspected hazards to appropriate agencies. 2. Consider ethical, socioeconomic, political, and legal implications of diagnoses of environmental disease. 3. Consider opportunities for the prevention of environmental disease. 4. Provide education (e.g., prevention) and counseling regarding environmental health risks (current and future), diseases, and contributors. 5. Develop and implement plan of care for rural patients, considering impact of patient, family, occupational, and community environmental risks. 6. Possess an awareness of barriers to implementation of a plan and identify alternatives that might also reduce the environmental risk (Develop a "Plan B"). 7. Assist in the mobilization of resources to implement the plan of care.	1. Collaborate with relevant community partners to plan and implement rural community change for better environmental health.	1. Access/Consult health care delivery systems resources to address environmental health problems/ concerns in rural areas (surveillance and monitoring). 2. Effectively communicate environmental risk/concerns and exchange information with partners and stakeholders.

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Evaluation: **The measurement of plan goals and expected results.**	1. Evaluate patient outcomes considering environmental reality in rural areas. 2. Provide recommendations and/or assist in implementation for action/change. 3. Ensure follow-up and that environmental data/evaluations were received and placed in the patient record.	1. Provide input to the effectiveness or performance of rural community interventions and programs considering health variations that may be attributed to the environment. 2. Provide input to refine current and plan for future environmental health initiatives.	1. Recognize gaps in current health care delivery systems resources related to environmental health and the impact on care and policy. 2. Provide input/feedback to health care delivery systems to drive change relative to environmental health resource gaps.