

Environmental Health and Nursing: The Mississippi Delta Project

A Modular Curriculum

**Division of Nursing
College of Pharmacy, Nursing & Allied Health Sciences
Howard University**

in collaboration with the

Agency for Toxic Substances and Disease Registry

and the

Minority Health Professions Foundation

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Foreword

The Mississippi Delta, a region made up of 219 counties in Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee, is centered around the rich fertile soil of the Mississippi River. Historically, an area rich in agricultural production, the Delta has become a developing area of corporate farming, petroleum processing plants, and other related industries.

Along with the development of the area and the certain benefits it has provided has come an awareness of environmental health concerns in the region and a lack of sufficient specific environmental health training among health professionals practicing within the Delta area.

Out of these concerns for environmental health has come this curriculum, *Environmental Health and Nursing: The Mississippi Delta Project, A Modular Curriculum*. Developed by The Howard University College of Nursing in partnership with the Minority Health Professions Foundation and the Agency for Toxic Substances and Disease Registry, this course of study will provide all undergraduate nursing programs in the Delta a comprehensive instruction guide for integrating regionally specific environmental health concepts into their existing curricula.

The six program modules cover wide ranging topics, which include environmental health and the Delta; the contribution of culture, race and economics on environmental health; common toxins in the Delta and their implications for health; human and community responses to toxic substances; environmental justice; and strategies for working with communities at risk.

Because of its strategic position and presence throughout the Delta communities, the nursing profession is uniquely positioned to help empower citizens and communities to address potential environmental health threats, to implement intervention strategies, and to convey the environmental health message to industries, communities, and citizens of the region. *Environmental Health and Nursing: The Mississippi Delta Project, A Modular Curriculum* provides a solid cornerstone for the Delta project. The Minority Health Professions Foundation and the Agency for Toxic Substances and Disease Registry are honored to have participated in its development.

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Faculty curriculum committees at Alcorn State University School of Nursing reviewed the modular curriculum in a pilot study during January 1998; their feedback is appreciated; thoughtful suggestions from them about training in environmental health and nursing helped the author team design train-the-trainer workshops. A complete list of acknowledgments is contained in [Appendix BB](#).

Environmental Health and Nursing: The Mississippi Delta Project

A Modular Curriculum

Preface

The inspiration for this modular curriculum grew out of the Mississippi Delta Project, a response, in part, to Executive Order 12898 (February 11, 1994), which outlines federal action to address environmental justice issues in minority and low income populations. Among the areas of the country most threatened by indiscriminate prevalence of environmental hazards are the 219 counties within the seven states comprising the Mississippi Delta Region (MDR): Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee. These counties have disproportionately high mortality and morbidity rates for diseases linked to a variety of excess hazardous chemicals found in the Mississippi Delta.

The Minority Health Professions Foundation partnered with the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry (ATSDR) to address concern for the effects of environmental pollutants on the health of residents of the MDR and the role that health professionals might play in addressing these concerns. This linkage gave rise to a number of fundamental questions. What are the particular environmental risks to health and well being prevalent in the MDR? To what extent can health care professionals collaborate with communities and families to abate some of the current and potential impact of environmental contamination? What should health professional students be taught in their educational programs pertaining to environmental health, particularly as descriptive of the problems of the MDR? What health promotion and preventive strategies should be learned and practiced? What are the health policy issues and political strategies which health professional students should be cognizant of and able to use with communities?

Nursing, the largest of the health professions, is in a particularly strategic position to work with and influence communities at risk. The nursing profession's long history of involvement in the community coupled with its presence in diverse settings, including industrial plants, gives it significant advantages as a medium for positive impact. Nursing is well positioned as a primary conduit through which prevention and health promotion messages and strategies can be conveyed, interventions can be targeted, surveillance and case findings can be achieved, and communities can be empowered and organized to address current and potential hazards.

In 1994, Howard University College of Nursing entered into an agreement with the Minority Health Professions Foundation to spearhead a nursing initiative to increase a focus on environmental health, with particular attention to the MDR. A survey of associate degree and baccalaureate schools of nursing in the Delta identified a range of attention currently given to environmental health issues. Associate degree programs tended to give the least amount of attention to environmental health,

although their graduates were the most likely to be employed in the Delta following graduation. Baccalaureate programs varied in the extent to which environmental matters were included. However, commonalities included a focus on the effect of lead and attention to community assessment. There was little evidence that special attention was given to the particular environmental hazards in the Delta resulting from industrial plants, toxic waste dumps, insecticides, and pollution; all of which effect the air, soil, and water. The relationship between these contaminants and the health of residents of the Delta, particularly ethnic minorities and the poor, was not evident from the survey. Also, culturally relevant strategies aimed at prevention were not apparent.

The results of the survey suggested that nursing education and the health care of residents in the Delta might be enhanced by an instructional resource that focused specifically on the environmental and health care needs of the region, and relevant nursing interventions. Thus, *Environmental Health and Nursing: The Mississippi Delta Project, a Modular Curriculum* was developed.

The intention of *Environmental Health and Nursing* is to provide a comprehensive instructional guide for faculty and students in associate and bachelor degree nursing programs for incorporating regional specific environmental health into existing curricula of schools of nursing. *Environmental Health and Nursing* consists of six modules addressing the following topics: Environmental health of the Mississippi Delta; the role of culture, poverty, religion, race, and economic development on environmental health; toxicology: major substances affecting the Delta; assessing individual, family, and community responses to toxic substances; environmental justice; and community perspectives as related to community organization, empowerment, partnering, and education. Presented examples, case studies, statistical data, and resources pertain to the Mississippi Delta, make the modules useful for local and regional experiences.

Module one is descriptive of the MDR, acquainting the learner with a broad sweep of the demography, the resources, the health status, the hazards, and a sense of the values and culture of the residents. Module two is an exploration into the culture, the economics, the history, and the religious complexion of the region, which make it unique in forming a context and laying a critical foundation through which to address environmental issues. The role of culture is emphasized in this module. Cultural practices, values, and traditions are significant contributors to health care behaviors and practices. The MDR is steeped in traditions and customs, many of which make residents unintentionally susceptible to environmental contamination. Culture and its related attributes are defining features of the people and must be considered seriously in designing approaches and interventions for promoting the health and well being of individuals, families, and communities.

Because of the requirement for nurses to be culturally sensitive and relevant, attention is focused on integrating culture into the practice of nursing. Nursing interventions and strategies to assist individuals, families, and communities to achieve a higher order of health for themselves and their environment are apparent throughout, but highlighted in units four and six. The scientific basis of the environmental hazards in the MDR are addressed in module three, where the focus is on toxicology. This module

leads the reader through a discussion of the leading chemicals, their properties, and the potential health hazards related to their presence. This knowledge is important to the roles of the nurse as educator, practitioner, researcher, and advocate.

The advocacy role of the nurse is most pronounced in modules five and six where attention is given to environmental justice and community organizations and empowerment. Many of the Delta's environmental problems are related to unjust acts being perpetrated against it by indiscriminate release of toxins into the air, soil, and waters of the region. These acts of injustice are central to a general discussion of the environmental justice movement and the knowledge, practices and roles nurses should consider in working with committees.

Module six provides in-depth understanding of mechanisms and strategies that nurses may find helpful when entering communities, working with community organizations, partnering with communities, and helping to empower them in promoting and advocating for positive environmental health conditions.

This highly versatile instructional tool is designed to be used by faculty in undergraduate nursing programs to the extent they feel it relevant and appropriate to their program of study. *Environmental Health and Nursing* includes vocabulary, objectives, content, learning activities, and teaching and evaluation methods. The modules include both basic and advanced nursing strategies which may be selected by the faculty according to the desired level of difficulty.

The design of the modules allows the educator great flexibility; a module can be used in its entirety or portions integrated into existing nursing courses or units. Also, the entire set of modules may be used as a freestanding course. Content is organized under major objectives. Bolded subobjectives precede related content. Related learning activities, as appropriate, are listed at the end of each section. These activities are intended to give relevancy to the content within the context of the local jurisdiction. Several of the learning activities are coded with “++” to denote more complex exercises suitable for senior baccalaureate nursing students or those interested in an in-depth research study. Reference lists are provided along with a variety of articles, case studies, documents, and data collection forms which may be used to enhance and illustrate portions of the modules. Directions to Internet sites are also provided to allow for currency and precision of regional data.

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Project Director, Delta Project 1998

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Module 3: Toxicology: Major Substances Affecting the Delta
Anne Mitchem-Davis, MS, RN, Teresa C. Richardson, MSN, RN,
and Pauline M. Green, PhD, RN

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Marcella A. Copes, PhD, RN and Teresa C. Richardson, MSN, RN

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Users' Guide to Environmental Health and Nursing

A faculty users' guide to *Environmental Health and Nursing: The Mississippi Delta Project* has been developed by the modular curriculum authors. The *Users' Guide to Environmental Health and Nursing* was suggested by nursing faculty curriculum members at Alcorn State University School of Nursing, who participated in a pilot review of the curriculum before final manuscript revisions. The *Users' Guide to Environmental Health and Nursing* provides suggestions on how, when, and where to implement curriculum materials into existing nursing programs. Included are an index of topics, an index of learning activities, and suggestions (illustrated through examples) on how to integrate the environmental health content and learning activities into any nursing curriculum. Copies of the guide are available on request from Howard University College of Pharmacy, Nursing, and Allied Health Sciences, Division of Nursing; 501 Bryant St. NW; Washington, D.C. 20059.