Maryland Environmental Public Health Tracking (EPHT) 8th Grade Curriculum and Videos

Practicing Natural Scientists have always maintained a mentoring relationship with science teachers and students. While public health professionals have developed outreach programs to make college students aware of the benefits of entering the public health profession, up to now—to our knowledge—middle school students have rarely been approached. Eight grade students are an unrecognized and potentially receptive target audience for EPHT activities for several reasons which include: a) inquisitiveness about the impact of environment hazards on chronic diseases or other health outcomes; b) use of EPHT tracking internet sites as sources of *reliable* information about diverse datasets and data selection, analysis and display tools; c) interest in using EPHT tracking web sites could convince others—parents and friends—about the value of learning about how environmental hazards can adversely impact human health at a personal level, e.g., why some children have asthma attacks; d) receptive to considering environmental public health as a possible career focus.

The Maryland EPHT Program used approved year 5 Centers for Disease Control and Prevention (CDC) cooperative agreement funds to have The Johns Hopkins University Bloomberg School of Public Health develop an 8th grade EPHT curriculum. The minimum requirements for the 8th grade EPHT curriculum and payment for this activity were accomplished by having a DHMH grant awarded to the Johns Hopkins University Bloomberg School of Public Health. It took approximately three months to write the grant and to have it approved by both institutions and another four months to finish the 8th grade EPHT curriculum.

The Maryland EPHT Program received the completed 8th grade EPHT curriculum in late July 2011. The 8th grade EPHT curriculum includes lesson plans, PowerPoint presentations, student handouts, vocabulary sheets and teacher notes for three lesson plans: 1) What is environmental health?; 2) Drinking water; and, 3) Asthma. Each lesson plan includes a 30-50 minute presentation that can be easily added to the 8th grade science curriculum. The 8th grade EPHT learning module meets the Maryland Department of Education core learning goal 6 for environmental science, expectation 6.3, *The student will analyze the relationship between humans and the earth's resources*; expectation 6.3.2, …*water quality* and quantity; expectation 6.3.1, …*air quality* for asthma, and expectation 6.4, *The student will develop and apply knowledge and skills gained from an environmental issue investigation to an action project which protects and sustains the environment*.

Each EPHT science lesson follows the same format: 1) Suggestions are provided to make it easier for the science teacher to ***engage*** the students by discussing several EPHT examples such as the Gulf Oil Spill or the earthquake/tsunami/nuclear disaster in Japan. 2) The science teacher and students together ***explore*** how dangerous substances in the environment can enter the human body through exposure pathways. 3) Small group discussions are used as a way to review personal examples which ***explain*** and make it possible for teenagers to understand how environmental triggers can lead to asthma attacks, and what they can do to avoid asthma triggers. 4) The ***elaborate*** activity encourages students to

use acquired EPHT information to make a difference to improve environment and health conditions of fellow students, family members, friends and society. This activity also introduces students to the use of the Maryland Tracking Network (MTN) public portal to form two types of data queries. Query results can be displayed in one table and in one graph. The Geographic Information System (GIS) utility can be used to select and display one chronic disease/health outcome measure and another hazard measure and then display both on the same computer map. 5) The ***evaluate*** section includes different ways to assess what new EPHT information students have acquired. The 8th grade evaluation formats include answering brief questions or completing individual or group projects. Finally, each resource/reference section contains URLs and other sources which provide more in-depth EPHT-specific information that can be used by the science teacher or the 8th grade students in reports, group discussions or class activities.

Two new videos were added in December 2013. They are part of the *Maryland Environmental Health Video Series*: The first video is called, Our Water, Our Health. The second video is called, Our Air, Our Health. Both videos first demonstrate how human activity has contributed to pollution of water as well as outdoor and indoor air. Next, the videos demonstrate what approaches have been taken to make water and air less polluted. The videos can be used along with or independent of the previously released EPHT 8th grade curriculum materials.

Requests for the Maryland EPHT 8th grade curriculum or the water or air videos should be sent to the Maryland EPHT Program Administrative Assistant, c/o Tanisha Knight (e-mail, Tanisha.knight@maryland.gov; telephone, 410-767-6234).