

behavioral sciences and health education

behavioral scientist



Behavioral Scientist Checkpoint

Do you want to work in a field that directly affects the health of individuals as well as the health of the population as a whole?

Are you interested in the causes and treatments of addiction and substance abuse?

Would you enjoy creating programs designed to help people change harmful behavior?

If so, read on

A TRUE TALE

After his junior year of high school, Ronald Davis, MD, MA, went to Ecuador for three weeks to take part in a program called *Amigos de las Américas*. In three weeks, he administered 500 measles shots to children in that country, in some cases traveling by mule to desolate regions. That experience piqued Dr. Davis' interest in public health and opened his eyes to an urgent need for more public health care professionals, ultimately leading to his entrance into the Epidemic Intelligence Service (EIS) at the Centers for Disease Control and Prevention (CDC). In the EIS he was assigned to the Division of Immunization, where he worked on the national measles elimination program for two years.



Ronald M. Davis, MD, MA

In between Ecuador and the CDC in Atlanta, Dr. Davis attended medical school at the University of Chicago. While he was there, the federal government released the first Surgeon General's report on health promotion and disease prevention. At around the same time, a renowned public health professor from UCLA had just described the seven steps to a healthy lifestyle, which included non-smoking, drinking in moderation, getting seven to eight hours of sleep each night and eating regular meals. This made a strong impression on him, and helped crystallize his career helping implement these principles in public health.

Dr. Davis remembers sitting in biochemistry class, having to memorize the eight enzymes of a metabolic pathway and thinking: "What's more important for helping people stay healthy — memorizing a set of enzymes or getting my patients to follow these seven steps to a healthy life?" This way of thinking carried over into his residency in internal medicine at the Michael Reese Hospital on the South Side of Chicago, where many of his patients were obese and had hypertension or diabetes. Again, he thought: "Wouldn't it be better if we could intervene before the conditions developed, by encouraging people to maintain a healthy lifestyle?" With this mission in mind, he went to the CDC, and began his career in the world of public

health. During his two years working in the immunization division, he was accepted into the preventive medicine residency program.

Dr. Davis stayed with the CDC for seven years, four of which were spent as Director of its Office on Smoking and Health. From there he became Medical Director of the Michigan Department of Public Health and four years later joined the Detroit-based Henry Ford Health System as Director of the Center for Health Promotion and Disease Prevention. Throughout his career, Dr. Davis has focused on the important work of continuing to prevent poor health by educating people and modifying their propensities towards unhealthy behaviors.

Profiling the job

Perhaps half of premature mortality in the U.S. continues to be related to unhealthy behaviors.¹ In fact, six of the ten leading causes of death in the United States are based on behavior, including HIV/AIDS, smoking, violence, accidents (called “injuries” by public health professionals) and substance abuse.² Behavioral scientists address these and many other important public health issues through research as well as through work in agencies, hospitals and clinics.

In general, an individual interested in doing behavioral health research first identifies a potentially harmful health-related behavior, and then applies a theoretical model of behavioral science (for example, the Transtheoretical Model of Behavioral Change described in the preceding chapter). Next, he or she would assess attitudes that might be expected to influence the behavior, such as perception of risk, and then design and implement a program which provides methods and strategies for changing the behavior. “For someone who wants to make a dent in reducing the toll of death and disease linked to human behaviors, it is necessary to understand not only what the behaviors are, but also to be sensitive to the best ways to change them,” says Dr. Davis.

A clinical behavioral scientist will implement the interventions designed by the research behavioral scientist. As is the case with Dr. Davis, clinical and research work may be done by the same person. For example, programs

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Did you know?

It has been estimated that more than 40 percent of people with drug addictions also have mental health disorders. About 10 million Americans have both substance abuse and mental health problems.⁶

might focus on child or substance abuse or behavioral changes to prevent unplanned pregnancies and the spread of sexually transmitted diseases (STDs) or tuberculosis. The clinical behavioral scientist will ensure that these programs are responsive to the special needs — socioeconomic, cultural and age-appropriateness — of those with whom he or she is working.

Curbing tobacco use in society has long been one of the leading agenda items for professionals in this field and one of particular interest to Dr. Davis, who for years has been considered a nationally recognized expert in tobacco control. “We have made substantial progress in reducing tobacco use in our society,” says Dr.

Davis. “The prevalence of cigarette smoking has declined from about 40 percent of all American adults, when the first Surgeon General’s report on smoking was released in 1964, to about 25 percent at present.” Dr. Davis says there is still a long way to go, particularly with teen smoking. The number of premature deaths caused by smoking still hovers around 400,000 each year in the United States, which is one-fifth of all deaths in this country.³

Dr. Davis says that education about tobacco’s harmful effects was once the predominant anti-smoking strategy. After some years it became clear that education alone was not enough, and that a cohesive public policy was also needed if tobacco use was to be significantly discouraged. In the mid-1970s, just such public policies began to be implemented in different parts of the country.⁴ Policy measures aimed at changing behavior included clean indoor air legislation and laws prohibiting smoking in public places, in the workplace and on airlines.⁵ New laws levied higher taxes on tobacco at the federal, state and local levels. Banning of tobacco advertising on television and radio and — through the 1998 Master Settlement Agreement — on billboards, prohibiting the sale of tobacco to minors and state strictures on placement of tobacco vending machines, have all constituted prominent and effective public health policy contributions to the smoking/tobacco use decline in the U.S.

Although Dr. Davis entered the field through a combination of medical training and intensive experience, the field is wide open to any number of



specialists in other, related areas. Public health educators and nurses, psychiatrists, psychologists and social workers all can conceivably find bright careers in behavioral science, although, according to Dr. Davis, either the sort of broad and deep experience in the field that he acquired through his career, or formal education in a university behavioral science program, would be necessary. Subspecialties in the field include environment and behavior, natural hazards research, health behavior research and modification, political and economic change, population processes/population aging, problem behavior, the study and prevention of violence and social science data analysis.

A day in the life

Name a behavioral science issue and, chances are, Dr. Davis is involved with it. As Director of the Center for Health Promotion and Disease Prevention of the Henry Ford Health System, he spends his days overseeing an array of exciting programs that encompass the full scope and breadth of behavioral science, from childhood immunization to violence prevention.

A typical day — not that there really is such a thing, he says — might include a review of patients in his smoking cessation program, which is conducted for the center’s managed care organization members, as well as a review of health clinics run by the center in eight Detroit schools. In addition, the center administers a community-based violence prevention program, employee wellness activities and flu-shot clinics in companies throughout southeast Michigan. Dr. Davis is also the principal investigator on two large research projects — one examining ways to boost childhood immunization, the other a study of tobacco litigation documents.

The service programs devised under Dr. Davis’s supervision are implemented by field-based behavioral scientists, nurses and health educators. “A field worker might spend the day working with residents of a nursing home, employing programs that strengthen their physical and cognitive functions,” he says. “In the morning, she might run an exercise program tailored to the special needs of an aging population, with emphasis on optimizing blood circulation. Over lunch, she might hold a roundtable discussion on nutrition and answer diet-related questions from the staff and the residents. Later in the afternoon, she’ll engage the residents in a current events workshop.”



“As much as 50 percent of premature mortality in the U.S. continues to be related to unhealthy behaviors.”

**Ronald Davis,
MD, MA**

Behavioral research is very much a field-based, on-the-ground activity, Dr. Davis notes. A case in point: A proposed study on the effects of smoking on pregnant women and their babies.

“It’s well-known that women who smoke during pregnancy often give birth to underweight babies,” he says.⁷ “Since premature babies are almost always underweight, a researcher could hypothesize that smoking during pregnancy could also cause women to give birth prematurely.” As a first step toward proving that hypothesis, the behavioral scientist will select a suitable community, and then enlist the help of local hospitals, clinics, religious congregations and community groups. Research methods might include door-to-door canvassing, a review of hospital records and interviews with women who have recently given birth.

“The goal is to assemble enough data and a sufficiently large statistical sample to produce a credible — and usable — hypothesis,” Dr. Davis says. “It is difficult, demanding work, but in the end it is enormously satisfying — and it can make a major impact on neonatal health.”



career at a glance

Ronald M. Davis, MD, MA

1995–Present	Director Center for Health Promotion and Disease Prevention, Henry Ford Health System
1991–1995	Chief Medical Officer Michigan Department of Public Health
1987–1991	Director Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention
1986–1987	Medical Epidemiologist Division of Health Education, National Center for Health Promotion and Education, Centers for Disease Control and Prevention
1984–1986	Epidemic Intelligence Service Officer Division of Immunization, National Center for Prevention Services, Centers for Disease Control and Prevention

1 <http://my.webmd.com/content/article/1728.54126>

2 <http://www.cossa.org/cahtbssrtestimony.html>

3 http://www.cdc.gov/nccdphp/pe_factsheets/pe_tobacco_longdesc.htm

4 http://www.cdc.gov/tobacco/sgr/sgr_1986/SGR1986-Chapter6.pdf

5 http://www.cdc.gov/tobacco/sgr/sgr_1986/SGR1986-Chapter6.pdf

6 <http://www.cdc.gov/du/facts/Policy.htm>

7 Personal communication, Dr. Ronald Davis, 12/17/01

THE MEDICINE/PUBLIC HEALTH INITIATIVE

Dr. Davis was elected to the American Medical Association's (AMA) Board of Trustees in June 2001. Because of his ties to both medicine and public health, he has been closely involved in an AMA-sponsored initiative that promotes the integration of medicine and public health. The Medicine/Public Health Initiative, which was launched in 1996 by the AMA and the American Public Health Association, was designed to bring together people who work in the fields of medicine and public health to explain and produce innovative solutions for the health problems of Americans. Its mission is to develop an agenda of action that engages public health and medicine in reshaping health education, research and practices.

The initiative's primary goals are:

- Engaging the community
- Changing the education process
- Creating joint research efforts
- Devising a shared view of health and illness
- Working together in health care provision
- Jointly developing health care assessment measures
- Creating networks to translate initiative ideas into actions

Historically, many people have worked in both professions without bridging the two, Dr. Davis says. When he was working at the CDC and with the Michigan Department of Public Health, many of his colleagues had little, if any, association with the medical profession and vice versa. "Cooperation between these two disciplines is absolutely essential for the health of our patients," Dr. Davis says, "particularly in situations such as those that have arisen lately."

When responding to disasters or terrorism with biological or chemical agents, for example, Dr. Davis says, medicine and public health must work together to make sure that everyone involved is prepared to deal with these

huge threats. In the case of anthrax or smallpox, the health care practitioner must be able to recognize a new case and report it quickly to the appropriate public health agencies. The public health agencies then need to confirm the diagnosis, which might involve sophisticated laboratory tests. Next, an epidemiologist will examine the pattern of reported cases in a particular locality to piece together whether the cases are isolated or widespread enough to be transmitted from place to place, which would occur with an infectious agent like smallpox. The public health agency will also be responsible for working with various partners in instituting treatments or guidelines for containment.