April 2007

This Month's Feature

From its inception nearly eight years ago, the Texas A&M Health Science Center has been committed to public health, and that commitment will continue to be a central part of its vision.

The HSC's public health promise also is echoed at the national level. For one week each April since 1995, the American Public Health Association (APHA) has organized "National Public Health Week" (NPHW) to focus on issues important to improving the public's health.

This year, NPHW was April 2-8 with the theme "Preparedness and Public Health Threats: Addressing the Unique Needs of the Nation's Vulnerable Populations." These special populations included mothers with children still living at home, local food banks, hourly workers and employees, schools serving children in grades K-12, and people with chronic health care needs such as diabetes, asthma, cancer and high blood pressure.

According to Ciro Sumaya, M.D., M.P.H.T.M., dean and Cox endowed chair of the HSC-School of Rural Public Health, rural areas often have health needs different either in type or degree from those of urban areas. These include farming accidents, environmental hazards and diseases within migrant populations, as well as a disproportionate increase in some diseases such as AIDS/HIV infections, other sexually transmitted illnesses, drug-resistant tuberculosis and substance abuse.

Moreover, there are numerous health problems in rural areas for which minimal information is available, and rural residents are, in general, older, less insured and earn less money than their urban counterparts. All of these factors are present in a backdrop of inadequate numbers of health professionals and limited health services or systems and other health-related resources.

Since 1998, the HSC-SRPH has been identifying and addressing these issues and striving to promote and protect the health of residents of the Brazos Valley and beyond, Dr. Sumaya said.

The school's emphasis on rural public health can be found from the classroom to the workplace. More than 90 percent of HSC-SRPH faculty are involved in public health research, service or outreach activities, and it has directly impacted 241 out of 254 counties in Texas and other areas nationwide.

"The school is a resource for new research and service models that will provide needed knowledge and outreach to address public health issues," Dr. Sumaya said. "These activities are not confined to the academic institution with its faculty, students, and staff but performed together with many local, state and national partners such as the Brazos Valley Council of Government, the Texas Department of State Health Services and the National Institutes of Health."

One of the HSC-SRPH's principal goals is to train and educate a public health work force that can identify and address rural health and healthcare issues. For example, students are required to take a 20-week graduate-level internship in community health settings, learning about public health activities in the real world.

Early in the school's evolution, it took a bold step in developing distance education programs whereby individuals in smaller communities across Texas can obtain this schooling, Dr. Sumaya said. The distance education program now includes two graduate degree programs in Austin, a site chosen because of the many personnel in state health-related agencies who are interested in public health and positions that can affect rural areas.

Further, HSC-SRPH experts in aging have attracted national foundation funds, as well as federal and state contracts, to analyze access, costs and quality of healthcare services - including nursing home care - and to evaluate models of health promotion to keep the elderly active and functional. These experts provide legislators and other decision-makers with data that can inform public policy, Dr. Sumaya said.

The Center for Community Health Development works closely with community leaders and organizations throughout the Brazos Valley in performing community and countywide health assessments, prioritizing health issues, developing interventions to surmount these important health issues and then evaluating the process to determine whether improvements in health have actually resulted from the actions taken.

A recent large project supported by the U.S. Centers for Disease Control and Prevention has given the HSC-SRPH the ability to engage smaller, rural communities in developing emergency preparedness plans and demonstrations. And, its Master of Health Administration degree program trains future administrators of hospital systems and clinics that are often serving the residents of smaller communities and rural regions.

"Our graduates are employed in a variety of public health positions at the national, state and local levels across the country," Dr. Sumaya said. "These graduates possess the skills and understanding of not only public health in general, but rural public health in particular. They form a vital support system and advocate for rural Americans. This dynamic and meaningful institution is academics at its best-quality science, rigorous education and a sense of community accountability. And we've only just begun."

Along with the School of Rural Public Health, other HSC components are doing their part to better overall public health.

For the HSC-College of Medicine at College Station, physicians in the Department of Family and Community Medicine are actively involved

http://tamhsc.edu/pulse/features/April2007.html
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The goal of Dr. McKeehan and other researchers is to work toward finding combinations of drugs to prevent fatty liver and Type II diabetes for energy. Type II diabetes reflects overload of the body's ability to handle sugar, which can be converted to fat and stored in the liver. Yet another major public health concern is tobacco use, and the Tobacco Intervention and Education Clinic is a service of the Department of Public Health Sciences. The clinic's approach is to support and encourage success. "It's not enough for students to know the mechanics; they have to know how to communicate," Dr. Bramson said. "For the last six years, our department has been targeting these skills in the second year with a communications workshop that focuses on relationship-centered care. Hopefully, these future physicians will be better equipped and prepared to have more rewarding and revealing conversations with their patients."

Meanwhile, one of the biggest concerns in public health is obesity.

The U.S. Centers for Disease Control and Prevention estimates 64 percent of Americans are overweight and 25 percent obese or "super obese" because of consuming food with too many calories along with too little exercise. Obesity in children ages 6-19 has increased to 15 percent and to 10 percent in ages 2-5 in the last decade, and the numbers are rapidly rising in developing countries like mainland China. The cost to the U.S. economy is estimated at $122.9 billion. Underlying visible obesity are hidden metabolic abnormalities that underlie Type II diabetes, cardiovascular diseases, neurodegeneration, polycystic ovary syndrome and cancer. It also can cause non-alcoholic fatty liver disease, a condition most commonly observed in alcohols that can lead to hepatitis, liver cirrhosis, liver failure and hepatoma (liver cancer).

At the HSC-Institute of Biosciences and Technology at Houston, Wallace McKeehan, Ph.D., director and professor in the Center for Cancer Biology and Nutrition, is tackling the obesity crisis. Holder of the J.S. Dunn Endowed Chair, Dr. McKeehan also is a professor of biochemistry and biophysics at Texas A&M University and a member of its graduate faculty of nutrition and graduate faculty of biomedical sciences at The University of Texas at Houston. He is an adjunct professor in molecular and cellular biology at Baylor College of Medicine.

Dr. McKeehan's research group has discovered a gene causing fatty liver in obese mice when fed a high-calorie, fat-filled diet that simulates chronic obesity in humans. Removing the gene cures the fatty liver, despite the fact the mice remain obese and consume the high-fat diet. Inhibiting the gene in obese people is hopeful for treating fatty liver disease. But, when fatty liver is cured through this approach, the mice exhibited more severe Type II diabetes, even when they were not severely obese and on a normal diet.

Fatty liver reflects an overload of the body's normal ability to convert food to fat, temporarily store it for leaner times and convert it to sugar for energy. Type II diabetes reflects overload of the body's ability to handle sugar, which can be converted to fat and stored in the liver. The goal of Dr. McKeehan and other researchers is to work toward finding combinations of drugs to prevent fatty liver and Type II diabetes simultaneously. Until then, health experts recommend eating fewer calories and getting more exercise.

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Yet another major public health concern is tobacco use, and the Tobacco Intervention and Education Clinic is a service of the Department of Public Health Sciences at HSC-Baylor College of Dentistry at Dallas, offering free tobacco counseling for patients, students, faculty and staff.

Counselors are certified tobacco treatment specialists who combine one-on-one counseling with nicotine replacement or prescription medications.

"Many people think of tobacco cessation counseling as a lecture on the ill effects of tobacco and the consequences of continued use," said Dr. K. Vendrell Rankin, associate chair and professor of public health sciences and director of the tobacco clinic. "In contrast, the Baylor clinic uses methods to assist individuals to resolve their own conflicts and improve their confidence, motivation and skills for quitting. The clinic's approach is to support and encourage success."

Each patient is evaluated and treated based on individual needs and circumstances. After a patient's tobacco history has been established, a counselor will help the individual create a "quit plan." The patient agrees on a timeline, and the counselor schedules a follow-up phone call or appointment soon after the quit date. Patients identify the triggers initiating tobacco use and are armed with coping skills to help develop new behaviors and cease tobacco dependency. Additional counseling is scheduled at regular intervals throughout the first 12 months after the quit date and is available over the phone or in person.

In South Texas, the inaugural class of more than 70 students at the HSC-Irma Lerma Rangel College of Pharmacy on the campus of Texas A&M University-Kingsville has taken a leading role in numerous public health projects, said Mary Chavez, Pharm.D., chair and professor of pharmacy practice at the college.

For example, students assisted with first aid at an American Heart Walk and the sixth annual Breast Cancer Walk/Run in Kingsville, helped build houses for Habitat for Humanity, distributed food at local food banks, and aided community pharmacy-based immunization clinics, community pharmacy health fairs, rehabilitation centers and the HSC-Coastal Bend Health Education Center at Corpus Christi. They also checked blood pressure; conducted physical exams; performed urine tests for pregnancy, glucose, proteins, nitrogen and leukocyte levels; and obtained swabs for AIDS testing at a family planning clinic.
In addition, a Kingsville nursing home received HSC-COP student support in grooming residents and coordinating birthdays and other celebrations, and they lent a hand to an outpatient physical therapy clinic during the CHRISTUS Spohn Kleberg Health Fair, conducted diabetic screening and blood pressure checks, and distributed educational materials. Pharmacy students performed patient check-in and discharge, scheduling and escort to examination rooms at a local physician's office and enrolled individuals in a community prescription assistance program, Dr. Chavez said.

"This first group of students has a real pioneering spirit," Dr. Chavez said. "These future pharmacists have seen the impact they can make in public health, and they will have greater opportunities to do so once they're out on their own. I've had people calling and asking for our students' assistance, which has brought strong recognition to our college."

Through these efforts of compassionate care, superior science and exceptional health education, the Texas A&M Health Science Center is upholding its commitment to public health, now and for years to come.