Editorial

Bridging the knowledge-action gap in diabetes along the U.S.-Mexico border

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More people die annually from cardiovascular diseases (CVDs) than from any other cause. In 2004, more than 17.1 million people died from CVDS, representing 29% of all global mortalities. Of this number, an estimated 7.2 million were due to coronary heart disease and 5.7 million were due to stroke. Low- and middle-income countries are disproportionally affected, given that 82% of CVDs deaths take place in these countries and occur almost equally among males and females. By 2030, almost 23.6 million people will have died from CVDs, mainly from heart disease and stroke. These are projected to remain the single leading causes of death for the next decade, especially if increased investments in prevention are not secured. Complications such as heart disease and stroke might also become the leading causes of death among people with diabetes mellitus type 2 (DM2), and diabetes itself is a risk factor for heart disease and stroke.

Diabetes is a chronic disease that affects many individuals globally and constitutes a major public health concern. DM2 comprises 90% of people with diabetes around the world and is largely the result of excess body weight and physical inactivity. Worldwide more than 220 million people are living with DM2.

In 2005, an estimated 1.1 million people died from DM2 and almost 80% of those deaths occurred in low- and middle-income countries. About half of the mortalities occurred in people under the age of 70, and 55% occurred in women. Until recently, this type of diabetes was seen only in adults but it is now also occurring in children. The World Health Organization (WHO) projects that global mortalities due to DM2 will double by year 2030, while the Pan American Health Organization (PAHO), estimates that some 35 million people in the Americas live with DM2 and that this number will have doubled by 2025. DM2 claims some 340 000 lives annually throughout Latin America and the Caribbean and produces serious health complications.

The burden of chronic diseases in the U.S.-Mexico border area requires extraordinary efforts for their prevention and control. DM2 is one of the most important and challenging public health problems in both Mexico and the United States; in this sense, it might be considered as the tip of the iceberg when it comes to chronic disease patterns along the entire U.S.-Mexico border. DM2 is the first cause of death in Mexico and the third leading cause in the United States. DM2 and other chronic diseases are a growing epidemic in the border area; for this reason the U.S.-Mexico Border Health Commission has defined DM2 as one of its priority objectives in the Healthy Border 2010 Program.

Therefore, it is especially timely that in this special issue of the *Revista Panamericana de Salud Pública/Pan American Journal of Public Health* the results of phase I of the U.S.-Mexico Border Diabetes Prevention and Control Project prevalence study are presented. The findings of this research, coordinated by the PAHO/WHO U.S.-Mexico Border Office in collaboration with the U.S. Centers for Disease Control and Prevention and Mexico's national health ministry, are being shared with readers to raise awareness regarding the importance of developing the appropriate tools, technologies, training, and policies that will enable health professionals and decision-makers to respond to the needs of those living with DM2, their families, and affected communities.

The unique study described in this issue considered the U.S.-Mexico border area as an integral epidemiological unit. One reason for this is that the border counties and municipalities share more similarities among themselves than they do with their respective countries; this is especially true in the case of the U.S.-Mexico sister cities. These similarities include environmental, cultural, and behavioral characteristics, such as physical activity, eating habits, and practices and beliefs related to health and disease. Cultural myths are deeply engrained

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among the border population, where expressions such as "diabetes is inevitable; my parents and/or grandparents had DM2 and now I have it" are frequently heard. This attitude is a consequence of inadequate knowledge about what causes DM2, how it can be prevented, and what its risk factors are.

The prevalence study included a representative binational border population sample and used a common methodology. The research sheds valuable light on the prevalence of DM2, the risk factors leading up to the disease's presentation, and the characteristics of those affected. The study results confirm the urgent need to strengthen binational and trans-border efforts to control chronic noncommunicable diseases and especially their risk factors, particularly physical inactivity, unhealthy diet, overweight, and obesity. This project furthermore demonstrated the feasibility of effective binational, interinstitutional, multidisciplinary teamwork to achieve a specific common goal. Most importantly, the dynamics of this experience lend themselves to replication in a multitude of settings to mobilize community action, to obtain urgently needed resources, and to marshal the necessary political will to face and tackle public health challenges of all types among the U.S.-Mexico border communities.

Study results show that the lives of close to 15% of the U.S.-Mexico border population aged 18 years or older are affected by DM2 and 14% are in the prediabetic stage. Among those diagnosed with DM2, 61% have at least one blood relative with the disease, 41% have high blood pressure, 70% are overweight or obese, and only 30% engage in regular physical activity. The data indicate that 11% in the sample population were unaware they had DM2 and had not been diagnosed and approximately 21% had not been to a health care facility. The results revealed a critical and alarming public health situation whose consequences are manifesting themselves in reduced socioeconomic productivity and spiraling health care costs.

The Project's efforts contribute to WHO's global goal established in 2005 to reduce the projected trend of chronic disease mortality rates by 2% each year until 2015, as well as to the U.S.-Mexico Border Health Commission Healthy Border 2010 Program objectives to 1) reduce mortality by 10% along the U.S.-Mexico border, 2) reduce DM2-related hospital admissions by 25% on the U.S. side of the border, and 3) not to surpass the current level of hospital admissions for DM2 on the Mexico side of the border.

The articles in this special issue present the Project's methodology and prevalence study results for the following: diagnosed and undiagnosed diabetes, pre-diabetes, smoking, alcohol consumption, physical activity, nutrition, and information on knowledge and practices. The Project's findings will be useful for policy- and decision-makers; developers of community programs; public health experts; researchers; professors and students of medicine, nursing, nutrition, and public health; and all others interested in border health issues in general and DM2 prevention and control efforts along the U.S.-Mexico border specifically.

The information shared in this special issue contributes significantly to strengthening the knowledge about diabetes and chronic disease risk factors on the border, and we hope that in so doing it will contribute to improving the policy and environmental conditions that are the underlying causes of DM2 on the border. The evidence clearly points to a critical need to create supportive environments for an active lifestyle, increase access to healthy and affordable foods, improve outreach and access to quality health services, continue research to enrich the evidence base of effective experiences, and strengthen surveillance along and across the border using a common methodology and considering the whole border as an integral epidemiological region.

Taken together, these elements, validated by the contents found in this special issue, are nothing short of a call to bridge the knowledge-action gap and to optimize health and quality of life for all who call the U.S.-Mexico border area home.