This paper looks at the feasibility of investigating how health risk behaviors established during youth contribute to the leading causes of morbidity and mortality in a young workforce. The population of interest consists of Mexican women living and working on the Mexican side of the United States-Mexico border. Proposed goals would (1) establish an epidemiological surveillance system to monitor the prevalence of youthful risk behaviors that most affect health, and (2) implement the PRECEDE-PROCEED Model, a worksite health promotion program for health planning and evaluation. Surveillance data collected from identifiable health risk behaviors would be used to determine and recommend public health needs as well as worksite health promotion action; to evaluate existing programs; and to implement new strategies. Concern about health determinants and possible solutions on the Mexican side of the border interrelate with the United States in that what affects one side of the border affects the other. Studying a youth population is significant because of its future impact on society; studying females is important because of the woman's role as family manager, educator, carrier of tradition, and bearer of children. (Contains 11 references.) (Author/LL)
HEALTH RISK SURVEILLANCE AND HEALTH PROMOTION IN A PREDOMINANTLY FEMALE BORDER WORKFORCE

Submitted for Publication to
EDUCATIONAL RESOURCES INFORMATION CENTER

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Health Risk Surveillance and Health Promotion
In a Predominantly Female Border Workforce

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Abstract

The purpose of this paper is to look at the feasibility and importance of investigating how priority health risk behaviors contribute to the leading causes of morbidity and mortality in a young workforce. The population of interest is Mexican women living and working on the Mexican side of the U.S.-Mexico border. Proposals would look at the Maquiladora female youth workforce with the goals of establishing: (1) an epidemiological surveillance system to monitor the prevalence of youth risk behaviors that most affect health; and (2) the PRECEDE-PROCEED model for health planning and evaluation in a worksite environment. Surveillance data collected from identifiable health risk behaviors would be used in determining and recommending public health needs as well as worksite health promotion action, evaluation of existing programs and implementation of new strategies.

The reason for concern about health determinants and its possible solutions on the Mexican side of the border to a United States population is the interrelation that exists in border communities. In many border communities, what affects one side of the border affects the other since they have become economically and socially interdependent. The significance of studying a youth population is its future impact on society. A limited number of behaviors usually established during youth contribute substantially to causes of morbidity and mortality. In addition, studying females is important because of their roles as family managers, educators, carriers of traditions, and bearers of children.

KEYWORDS: Surveillance. Health Promotion. Youth Risk Behavior
Introduction

The purpose of this paper is to propose methods of identifying which health risk behaviors established during youth contribute to high rates of morbidity and mortality as a result of alcohol, tobacco, or other drug use in adulthood. Of primary interest are those behaviors that contribute to alcohol, tobacco or other drug use among Mexican women living and working on the Mexican side of the U.S.-Mexico border. Present morbidity and mortality rates would be established as baseline information in order to evaluate any recommendations. In addition, an epidemiological surveillance system to monitor the prevalence of youth behaviors that most affect and contribute toward substance use and abuse is proposed. Surveillance data gathered from identifiable health risk behaviors should be used to determine and recommend needs for public health and/or worksite action as well as evaluation criteria for existing programs and for implementation of new strategies. It is expected that Green and Kreuter's (1991) PRECEDE-PROCEED model for health planning and evaluation would be implemented at various worksites.

Many of the ideas incorporated in this paper have root with the Centers for Disease Control and Prevention (CDCP) emphasis on focusing national attention on the health of youth. CDCP has sought to direct the country and agencies that serve youth to concern themselves on those specific behaviors that most influence
health and on the need for comprehensive school health education programs that might prevent the establishment of many of these behaviors among youth. In 1988, CDCP established the Division of Adolescent and School Health (DASH) to serve four functions: first, to identify the most significant health risks among youth; second, to monitor the incidence and prevalence of those risks; third, to implement and sustain broad national programs to prevent those risks; and, fourth, to evaluate and improve the impact of these risk prevention programs. Of great importance to the concepts established in this paper is CDCP's definition of an epidemiologic surveillance system: Epidemiologic surveillance is the ongoing and systematic collection, analysis, and interpretation of health data in the process of describing and monitoring a health event. This information is used for planning, implementing, and evaluating public health interventions and programs. Surveillance data are used both to determine the need for public health action and to assess the effectiveness of the programs.

Significance of Health Risk Behaviors

The reason for looking at behaviors that contribute to alcohol, tobacco or other drug use is because of their strong relationship to youth morbidity and mortality. DASH reports that among persons aged 1-24 years, approximately 60% of all deaths are due to only four causes: motor vehicle crashes (33%), unintentional injuries (15%), homicide (10%) and suicide (10%). There also appears to be a connection between the 800,000 teenaged girls who
become unintentionally pregnant and the 2.5 million teenagers who are infected with a sexually transmitted disease.\(^3\) A maquiladora workforce, on the surface, has all the ingredients for a population with a similar profile as an at risk youth group in the United States.\(^1\,^4\) Many of the maquiladora managers prefer to hire young, single females into the labor force because of perceived docility and dexterity. Females composing a low of 65.7 percent of the total maquiladora workforce to a high of 81 percent are reported.\(^4\,^5\,^6\) This difference is probably the result of surveying different maquiladoras in different parts of the country. Nevertheless, what is agreed upon is that the predominate age of female maquiladora workers varies between 16 and 24 -- what is considered high school and college age in the U.S. and also a population at risk for certain health problems. A review by DASH of the leading causes of death among all age groups in the United States reveals that nearly 60 percent of all deaths are due to only two causes.\(^3\) Thirty-six percent of all deaths are due to diseases of the heart, and 22 percent are due to malignant neoplasms. A small number of behaviors also contribute greatly to mortality and morbidity from these two causes. These behaviors include tobacco use, excessive consumption of fat, and insufficient physical activity. Although the diseases they cause are not manifest until adulthood, these behaviors often are established during youth, often extend into adulthood, and often are inter-related. Although these are very real problems to many people, the good news is that these health problems are largely preventable.
Since its implementation in 1965, the maquiladora industry has seen tremendous growth both in material and human resources. Economists forecast a doubling of growth by 1995. The maquiladora plants see themselves as clinics and educational facilities. In addition, a maquiladora health initiative considers disease prevention and health education as normal behavior for the private sector. The maquiladoras already have as an objective to institutionalize environmental health and educational efforts. Much of the health initiatives discussed include immunization and the involvement of physicians and nurses. While these efforts are applauded and these measures of health prevention and promotion encouraged, there appears to be too much emphasis on a curative approach.

Since the maquiladora workforce resembles the youth population targeted by CDCP's DASH program, the maquiladora sector could easily be involved in health promotion and health prevention initiatives similar to U.S. prevention efforts. Maquiladoras might become more effective and efficient in preventing health problems affecting youth by implementing two related actions. First, maquiladoras might focus their efforts on modifying those specific behaviors established during youth that result in the most mortality, morbidity, and social problems. Second, these maquiladoras then might periodically monitor the prevalence of those behaviors over time to assess whether the behaviors consequently are increasing, decreasing, or remaining the same.
These strategies encouraged by CDCP and already implemented by agencies and schools have good positive potential.

**Surveillance of Priority Health Risk Behaviors**

The cause and determinants of health-risk behaviors are very complex. Youth are already regularly exposed to information about tobacco, alcohol and drug use; violence; and sexuality through their school, media, parents, friends and community. Measuring only relevant knowledge, attitudes, beliefs or intentions will not provide an accurate description of the level of risk because the relationship between these factors and the priority health-risk behaviors themselves often is weak, unproven or non-existent. For example, both youth and adults know that smoking causes lung cancer, yet many still choose to smoke. The four causes of mortality that account for nearly 70 percent of all deaths among youth are not necessarily new information. We correctly associate alcohol and drug use with much morbidity and mortality from these four causes. Also associated are many other social problems not reflected in health statistics. This suggests that the health problems young people experience are caused largely by a relatively small number of behaviors such as drinking and driving, and precocious sexual intercourse. Although we think we know the reason, it is the reason behind the reason that needs attention. It is the behaviors established during youth that extend into adulthood that cause the vast majority of morbidity and mortality in adults. The concern should be to find what precipitates youth
behaviors that becomes adult behaviors which translate into adult health problems. This was the concern CDCP had when DASH was established in 1988. The functions of DASH were to identify problems, monitor behavior, implement programs and evaluate progress of youth health. To accomplish its goal, DASH assembled representatives from all state departments of education, 19 federal agencies and foremost scientists in the areas affecting youth health. The outcome of their efforts was a 75 item questionnaire completed in October, 1990, designed to survey youth health risks. The Youth Risk Behavior Survey (YRBS) has been used to collect national data compiled by CDCP. The focus of the YRBS has been on six priority health-risk behaviors including (1) behaviors that result in intentional and unintentional injuries; (2) drug and alcohol use; (3) dieting behaviors; (4) physical activity; (5) sexual behaviors that result in HIV infection, other sexually transmitted diseases and unintended pregnancies; and (6) tobacco use. It is hoped that the data from the proposed studies will be used by agencies and schools (it could certainly include the maquiladora industry) to (1) monitor how priority health-risk behaviors among youth increase, decrease, or stay the same over time; (2) evaluate the impact of broad national, state, and local efforts to prevent health-risk behaviors; and (3) monitor progress in attaining objectives.
Worksite Health Planning

There appears to be a sense of commitment to the health of the maquiladora workers. A maquiladora health initiative is already in place. The commitment includes a health committee, clinics, physicians and nurses. Another commitment that would have a positive long-lasting impact is involvement in health prevention and health promotion among the workforce. The maquiladora industry could use the CDCP’s YRBS as a method of assessing needs which describe the behaviors the current workforce has that could lead to morbidity and mortality in adulthood. In addition, the YRBS could assess which current youth behaviors could impact present risk for health problems during youth. After the results of the study are tabulated with needs and behaviors identified, a worksite health promotion program could be implemented for the workforce. The recommended model for health planning and evaluation is Green’s and Kreuter’s PRECEDE-PROCEED model for implementing a health promotion worksite program. The PRECEDE framework takes into account the multiple factors that shape health status and helps the planner arrive at a highly focused subset of components targeted for intervention. PRECEDE also generates specific objects and criteria for evaluation. The PROCEED component provides additional administrative steps in health promotion planning, policy, implementation and evaluation. The worksite health promotion idea in a maquiladora industry provides an excellent opportunity and a challenge within their framework to identify and develop programs to change detrimental youth behavior. A commitment to include
health education in an ongoing instructional structure is necessary.

The growth of the labor force with the increased participation of women may be matched in future years with a corresponding growth in the employment of older people needing or choosing to work rather than to retire. These demographic trends place new demands on employers to cope with issues of child care and employee health. Escalation of health-care costs and the increasing proportion of the burden of medical costs born by industry has brought about an explosion of alternative strategies to contain costs, with health promotion being one among many still in an experimental phase. A worksite health promotion plan in a youthful workforce could not only be a cost containment outcome but could lead to a reduced turnover in the labor force.

Whether for cost containment or other reasons, the planning, implementation, and evaluation of worksite health promotion programs can follow the PRECEDE and PROCEED phases. Particular attention to balancing the emphasis on behavioral and environmental changes can serve to assure greater support from management and employees alike. Care in the implementation process to provide for continuous monitoring and feedback through advisory and communication structures will assure continuity and sustainment of the program, especially since the program is designed to include all employees, not just a few in current athletic maquiladora programs.
Conclusion

Because the maquiladora industry along the border has been an employment magnet for many workers from the interior of Mexico, many border towns and cities have doubled their population. Municipal, environmental, public health and utility departments have been stretched to their limits by the large numbers of recent arrivals at the border.\textsuperscript{4,5,9,10} Although some studies say the employment attraction stops at the U.S. border, others speculate that those who are looking for opportunity will cross to the U.S. side, whether legally or illegally. Because of a perceived unwillingness of immigrant Hispanics to assimilate into a large society, the tendency is to concentrate in towns located along the U.S.-Mexico border and the closer to the border the migration, the more a feeling of permanence is felt.\textsuperscript{11} Field studies have found that migratory flows from traditional communities in Mexico remain unchanged or may have increased since the Immigration Reform and Control Act (IRCA) of 1986. The migration to the U.S. by women and children appears to have increased since the IRCA's enactment to take advantage of the amnesty program, for family reunification or for a better opportunity.\textsuperscript{12}

Because of the potential for border crossings and establishment of U.S. residency, and because of the need to be good neighbors, it is important to be concerned about the health of all youth along both sides of the border. A Youth Risk Behavior Surveillance System established on both sides of the U.S.-Mexico border could have potential of identifying risky health behavior.
References


