



**Border Health Research  
Agenda Council Meeting  
Report**

**Edinburg, Texas**

**February 7 & 8, 2002**

## **Background**

- In July, 1999 the Structures and Mechanisms for United States-Mexico Border Health Cooperation meeting sponsored by the Pan American Health Organization, the WHO Collaborating Center on Border Health and Rural Health Research and Development and the University of Arizona, Rural Health Office was held within the framework of the Universities and Disadvantaged Communities Meeting. During this meeting, fragmentation of efforts and lack of communication mechanisms were identified as the two biggest problems affecting binational cooperation for health. Participants at this meeting proposed identification and classification of institutional resources as a solution to fragmentation of efforts. In response to the responsibilities assigned, the Pan American Health Organization (PAHO) did a Border Health Inventory identifying 121 academic and research centers involved in health activities. PAHO also prepared a proposal targeted to involve border academic and research institutions in cross border health activities. This proposal includes four components: the creation of a virtual library specialized in border health; the development of a border health research agenda; transfer of technology and human resources; and the conversion of scientific information into information that can be useful for decision makers and border communities.
- In April and June, 2000 this proposal was presented to several academic institutions within the working framework of the Health Education Training Centers Alliance of Texas (HETCAT) and the Universities Conference Group of the United States-Mexico Border Health Association, and support was secured from participating institutions.
- In October, 2000 the Pan American Health Organization and the University of Texas System co-sponsored a meeting between academic institutions and health care service providers involved in public health related activities on the United States-Mexico Border. As a result of this meeting, participant institutions agreed to create a border health research council having the following functions as a minimum:
  - To assess the need for binational research collaboration for the improvement of health and welfare in border communities.
  - To formulate recommendations and advocate with private and public funding sources for the implementation of a structured research agenda for the improvement of health and welfare in border communities.
  - To mobilize resources for the implementation of a research agenda.
- As follow up on the recommendations and commitments that had been made, the Pan American Health Organization agreed in coordination with the University of Texas, Pan American (UT Panam), to hold the Border Health Research Council meeting at Edinburg, Texas on February 7 and 8, 2002.

## **Objectives**

The objectives of this meeting were:

- To identify relevant areas of research for the United States-Mexico border.
- To elect the Officers of the Border Health Research Council.
- To define the strategies to be used by the Border Health Research Council in carrying out its functions.

## **Participants**

This meeting had participation by staff from academic and research institutions involved with or interested in border health issues, representatives of associations or alliances of academic institutions, staff from public health institutions involved in performing activities on the border, representatives of institutions funding public health projects on the border and representatives of non-governmental organizations (list of participants is attached). Additional comments and contributions from the states of California and Arizona were included in group discussions and in the document on lines of research that are relevant for the border.

## **Meeting Methodology**

The meeting was divided into four parts: protocol, presentations for providing a reference framework; work groups for defining lines of research that are relevant for the border; and group discussion for proposing sustainability strategies for the Border Health Research Council.

### ***Protocol Part***

The meeting was opened by Dr. Rodolfo Arévalo, Vice President of the University of Texas, Pan American at Edinburg; Dr. Alfonso Ruiz, Chief of the Pan American Health Organization Field Office; and Dr. Paul Villas, Executive Director of the Border Health Office at the University of Texas, Pan American, Edinburg.

### ***Reference Framework***

A presentation on the needs and recommendations that gave rise to the Border Health Research Council meeting at Edinburg, Texas and another on the methodology to be used during the meeting served as a reference framework for group work. The following concept documents had also been sent out beforehand, which also served as a reference framework: “Health Research Agenda for the United States-Mexico Border”; “United States-Mexico Border Health Research Council Agenda, Functions and Operational Organization”; and “Relevant Lines of Research for the United States-Mexico Border”.

### **Work Groups**

The group was divided into four working groups: Disease Control and Prevention; Health and Environment; Health Care Systems and Services and Human Resource Development; and Health, Society and Development. People selected a working group according to their own research profiles or specific interests. Each group was coordinated by a facilitator who had been identified previously. The profile for facilitators included knowledge of the dynamics of binational groups, bilingual skills, experience in moderating work groups and assurance of subject matter impartiality. Members of each work group made an individual review of the lines of research proposal that had already been prepared by the Field Office. Then, based on the question “What other lines of research should be added to the proposal?”, members of each work group contributed new lines of research. After this, the different work groups discussed on the rationale for each of these lines of research. Each of these work groups then identified specific, relevant issues for the United States-Mexico border which were compatible with the interests of both researchers and academic institutions. Finally, each work group presented to the overall group the outcomes of each group.

### **Group Discussion**

During the second day of the meeting, the group worked on identifying strategies for providing sustainability to the research agenda. For this, the document “United States-Mexico Border Health Research Council Agenda, Functions and Organization of Operations” was used as a reference. Participants discussed the points presented in the proposal and made a series of recommendations. They also elected members of the steering committee, the co-presidents of the steering committee by simple majority in open voting. Research area coordinators were appointed by the corresponding work group.

### **Meeting Outcomes**

#### **Identification of Relevant Areas of Research for the United States-Mexico Border**

As a result of the participation in the work groups, the lines of research proposed in the document “Relevant Lines of Research for the United States-Mexico Border”, were reviewed and changed accordingly to the interest of the participants. Rationales were then found for considering these lines of research within the border health research agenda. Lastly, relevant issues were identified for the border for each of these lines of research. The attachment “Border Health Research Agenda” contains suggestions from the group, plus suggestions sent in by a group of public health service provider institutions from the State of California.

#### **Define the Strategies to be Utilized by the Border Health Research Council in Performing its Functions**

The document “United States-Mexico Border Health Research Council Agenda, Functions and Operational Organization” was used as a reference for defining the functions of the Border Health Research Council. The points reviewed and agreed on included the following issues:

- The Border Health Research Council will have a very simple structure. All academic and research institutions, whether governmental, non-governmental or private, that are interested in the Council's overall goal of improving the health of communities on the U.S.-Mexico border through the application of scientific knowledge generated by academic and research institutions on the border, are potential Council members.
- All decisions shall be made by a simple majority of participating members in all meetings called by the Council.
- A steering committee will provide follow up on recommendations that are made by the Council.
- The council of officers will be made up of twelve members:
  - Two co-presidents (one from each side of the border)
  - Two representatives (coordinators) from each research area (one from of each side of the border).
  - Two ex-officio members; one, a representative from the Pan American Health Organization and the other, a representative from the United States-Mexico Border Health Commission. There was broad debate on this point on the importance of having the U.S.-Mexico Border Health Commission (USMBHC) involved as a member of the steering committee. In order to formalize the inclusion of the USMBHC, the other members of the Steering Committee will request that a presentation be made on this issue at the next plenary meeting, the date for which is still pending. Dr. Paul Villas, Texas State Commissioner, will recommend inclusion of this point on the agenda for the next meeting. Concerning this same point, participants emphasized the importance of having both institutions assign funding resources for operating the Border Health Research Council and for having both institutions mobilize funding resources required for performing research activities that have been identified as being relevant for the border.
- Members who are interested in or already working on activities for researching specific issues will be grouped around research areas. Four areas were considered as a start:
  1. Disease Control and Prevention
  2. Health and Environment
  3. Health Care Systems and Human Resource Development
  4. Health, Society and Development

- The BHRC will meet every four years to study research needs on the border, and every two years to assess progress that has been made in each of the research areas.
- The steering committee will hold a teleconference every six months plus an annual meeting every year.
- The Pan American Health Organization and the United States-Mexico Border Health Commission (USMBHC) will provide support to the officers of the Council.

The roles of the co-presidents (if included as a member of the steering committee) of the steering committee were defined as follows:

- To coordinate the Council meetings as may be appropriate.
- To provide follow up on the activities of the Council, the steering committee and research areas.
- To provide support to the coordinators of the various research areas.
- To work in advocating for and promoting the border health research agenda among academic institutions and public and private funding organizations.

Profile for the co-presidents of the steering committee includes:

1. High-level staff members from a border academic or research institution.
2. To have a budget of their own for promotion and performing an advocacy role for the border health research agenda.
3. To be knowledgeable of public and private funding mechanisms needed for mobilizing resources for research activities.
4. To be knowledgeable of the border region.
5. To be a researcher who is recognized among border, national and international academic institutions.

The role of research area coordinators was defined as follows:

- Create and feed a database of research projects registered in the portfolio of the BHRAC
- Promote the registration of research projects addressing border health of the corresponding research area

- Register and classify research projects on border health of the corresponding research area
- Look for and disseminate information among border researchers about funding opportunities related to the corresponding research area
- Prepare semester reports for the steering committee
- Participate in semester conference calls of the steering committee
- Prepare report to the BHRAC every two years

The research area coordinator profile includes:

- Researcher and/or staff member from a border academic institution within the specific area of research that the person will be representing.
- Knowledgeable of the border region and border health.
- Recognized by his/her researcher colleagues.

***Elections for the Officers of the Border Health Research Council***

Results of elections for Officers were as follows (it was decided that PAHO would follow up on those cases in which the persons proposed were not in attendance):

**Steering Committee and Co-Presidents**

United States: Dr. Homer Peña and Dr. Nuria Homedes were proposed. (Although present, Dr. Homedes asked to first consider Dr. Homer Peña)

Mexico: Dr. Carlos Trimmer Hernández

**Research Area Coordinators**

Disease Prevention & Control

United States: Dr. Joseph McCormick and Dr. Manuel de la Rosa were proposed.

México: Dr. Eduardo Pérez Eguía

**Health & Environment**

United States: Dr. Ray Elizondo

México: Dr. Pedro César Cantú Martínez

**Health Care Services & Human Resources**

United States: Dr. Ramón Baez

México: Dr. Esteban Gilberto Ramos Peña

### **Health, Society & Development**

United States: Jill de Zapien and Rebeca Ramos were proposed.

México: María Gudelia Rangel Gómez

#### **Ex-Officio Members:**

Pan American Health Organization, United States-Mexico Border Field Office.

The United States-Mexico Border Health Commission was proposed; this decision remains pending.

### **Conclusions**

- The meeting of the Border Health Research Agenda Council enabled an exchange of ideas to take place among representatives of academic and research institutions interested in border health issues, representatives of border public health service provision institutions, and representatives of university and associations or alliances having activities for improving the health of border community organizations.
- The meeting of the Border Health Research Agenda Council enabled relevant lines of research in health and environmental health for the United States-Mexico border to be identified.
- The meeting of the Border Health Research Agenda Council enabled strategies to be utilized by the Border Health Research Council in the performance of its functions.
- The members of the Steering Committee of the Border Health Research Council were elected, and its functions were defined.
- The PAHO Field Office will provide follow up on those points that were left pending until the structure and functioning of the Border Health Research Council become consolidated, including the seeking of mechanisms for presenting these points at the next meeting of the United States-Mexico Border Health Commission.





Border Health Research  
Agenda  
Lines of Research

**Attachment I**

# GENERAL RECOMMENDATIONS

- Prioritize projects are aimed at achieving the goals of Healthy Border 2010 and have an immediate public health application.
- Do we have researchers who can devote energies to do research? Need to identify who they are and where they are.
- When comparing binationally, first compare between peers.
- Create conceptual and methodological framework for binational collaboration.

## AREA: DISEASE PREVENTION AND CONTROL

### LINES OF RESEARCH

1. Analysis of the major causes of morbidity and mortality by improved accuracy in determining rates of disease, risk factors, and the social and economic burden of disease.
  - 1.1 Justification: low income economy; migration; presence of high risk populations, especially indigent, in both sides of the border; baseline data needed; differing national approaches; border crossing for health care results in underreporting of diseases; the need to follow up cross-border contacts; existence of several factors for emerging diseases; risk of bioterrorism.
  - 1.2 Relevant aspects to the U.S.-Mexico Border
    - Basic epidemiological studies of infectious and chronic diseases in border populations
    - Risk factors associated with the prevalence of chronic degenerative diseases (e.g. diabetes), particularly as related to ethnic, social and cultural groups
    - Assess effectiveness and appropriateness of chronic disease registries, including cross-border collaboration
    - Identifying infectious disease risk factors in minority or disadvantaged border populations
    - Assess demonstration projects to reduce health disparities in minority or disadvantaged border populations
    - Analysis of the social and economic burden of disease in border populations
    - Studies to understand the “paradoxically low” infant mortality along the border
    - Studies of risk analysis and response capabilities to emerging diseases in specific geographical areas
    - Situation of human parasitosis, especially neurocysticercosis in migrant population
2. Perform operational research including cost-effectiveness studies of local disease prevention and control interventions.
  - 2.1 Justification: limited resources; magnitude of disease relative to local resources; binational aspects of intervention strategies
  - 2.2 Relevant aspects to the U.S.-Mexico Border
    - Evaluation of evidence-based interventions using methodologies created at the local level of both Mexico and the U.S. border

- Cost-effectiveness of substance abuse prevention
  - Cost-effectiveness of *Promotoras* strategies
  - Cost-effectiveness studies of community capacity building interventions for HIV/AIDS prevention
3. Development and assessment of technologies for the prevention and control of diseases that are prevalent on the border: vaccines, therapeutic agents, diagnostic techniques and methods, development of animal models for experimentation.
- 3.1 Justification: needs for capacity building and development of local expertise; needs to determine methods available; high infectious disease prevalence on the border; increasing antimicrobial resistance; advance science on border; need for binational standardization; sharing technology binationally; lack of clinical data on effects of therapeutic agents in minority populations.
- 3.2 Relevant aspects to the U.S.-Mexico Border
- Assess application of binational tuberculosis card
  - Development of genetic diagnostic screening technologies
  - Standardizing HbA1C analysis in diabetic patients
  - Development of clinical trials assessing new therapeutic agents in border populations
  - Assessing rapid diagnostic and screening tests as they become available
4. Assessment and/or development of epidemiological and environmental models for the surveillance and control of vector-borne diseases.
- 4.1 Justification: globalization; increased trade; high population mobility in the border; endemicity of vector-borne diseases and their vectors; ecological changes; migration; changes in land use; mobilization of potential reservoirs.
- 4.2 Relevant aspects to the U.S.-Mexico Border
- Identification and assessment of mosquito breeding sites maintaining the prevalence of arboviruses in nature
  - Assessing risk factors for vector-borne disease transmission
  - Assessment of social participation in the prevention and control of vector-borne diseases
  - Development of mathematical models to predict disease occurrence
5. Development and evaluation of strategies for the surveillance, prevention and control of food and water-borne diseases.
- 5.1 Justification: high incidence of food and water-borne diseases; Transport and sale of uninspected foods; population mobility; Variability in border sanitation and water quality; indiscriminate use of pesticides.

- 5.2 Relevant aspects to the U.S.-Mexico Border
- Assess preventive educational strategies for communities, and traditional preserved food producers
  - Assess current strategies for control of food-borne diseases
  - Evaluate existing surveillance systems for food and water-borne diseases
  - Assess resources available along the U.S.-Mexico border for surveillance and diagnosis of food and water-borne diseases
  - Assess local risk factors for food and water-borne diseases
  - Evaluate health effects of water chlorination by-products
  - Assess toxigenic E. coli in animal products and food
6. Application of molecular biology techniques in the study of diseases prevalent on the U.S.-Mexico border.
- 6.1 Justification: The molecular biology techniques are the most powerful technology currently available; broad application; need for development of local expertise; better orientation of surveillance programs; better definition of disease sources.
- 6.2 Relevant aspects to the U.S.-Mexico Border
- Antigenic and genetic characterization of microorganisms
  - Identification of serotypes and genetic variants of the main disease agents in the border
  - Identification of host genetic susceptibility to disease
  - Development of molecular and genetic techniques for characterizing and classifying microorganisms
  - Development of methods for the recombination and genetic manipulation of microorganisms conducting to the development of new vaccines and other immunogenic products
7. Assessing population-based mechanisms contributing to the development of antimicrobial resistance.
- 7.1 Justification: frequent use of over-the-counter antibiotics; inappropriate use of injectable and oral antibiotics in the health field; large use of antibiotics in animal food production; need for development of new antibiotics.
- 7.2 Relevant aspects to the U.S.-Mexico Border
- Study antibiotic use patterns in border communities in both agriculture and health care
  - Development of rapid and accurate laboratory test for detection of antibiotic resistant strains of microorganisms
8. Implementation of existing methods for the diagnosis, prevention and treatment of sexually transmitted diseases (STD) in border populations.
- 8.1 Justification: magnitude of STD problem; high migration; nature of the disease; variations in diagnostic methods; cultural norms and sexual behaviors; rapidly

growing and changing population; difficulty in identifying and locating contacts; need for standard follow-up and treatment.

- 8.2 Relevant aspects to the U.S.-Mexico Border
  - Demonstration studies of culturally appropriate strategies for prevention and control of STDs
  - Studies to identify cultural risk factors for STD transmission and barriers to prevention and control
  - Clinical field testing with new therapeutic agents in border populations
9. Situational analysis of oral health in children in border localities including cavities, deformities, the effects of micronutrients, etc.
  - 9.1 Justification: Oral health is an essential component of general health; disparities among minority and disadvantaged populations; insufficient data available on border communities on oral health; high morbidity.
  - 9.2 Relevant aspects to the U.S.-Mexico Border
    - Development of standardized assessment methods of oral health and dental needs in border populations
    - Determining workforce needs for preventive, curative and specialized dentistry
    - Identifying risk factors for dental disease including cultural and environmental factors affecting oral health in border populations
    - Assess costs associated with poor oral health and dental disease
    - Assess factors affecting access, availability and use of dental health services
10. Analyze morbidity and mortality due to intentional and unintentional injuries and test interventions.
  - 10.1 Justification: high rates of mortality along the border; the need to document domestic violence as a public health problem; increased cross-border risk of intentional and unintentional injuries; migration; variability in laws and enforcement.
  - 10.2 Relevant aspects to the U.S.-Mexico Border
    - Assess risk factors relevant to automobile crashes
    - Demonstration studies to evaluate strategies for prevention of mortality from intentional and unintentional injuries
    - Studying risk factors for violent behavior (alcohol, drug abuse, unemployment, etc.)
    - Studying women violent mortality causes and characteristics

## AREA: HEALTH AND ENVIRONMENT

### LINES OF RESEARCH

1. Risk assessment of major pollutants in air, soil, water and food. This includes socioeconomic strata and occupational risks by age groups.
  - 1.1 Justification
    - High demographic, urban and industrial growth of the border
    - Increased intensive agriculture and increased use of chemical products in agriculture
    - Underreporting of environmental hazards and their impact
    - Lack of early detection of diseases and environmental risks that prevent further research
    - Lack of communication between research institutions, environmental groups and policy makers
  - 1.2 Relevant aspects to the U.S.-Mexico Border
    - Studies on pollution caused by the use of pesticides in agricultural areas of the border
    - Lead pollution studies in Nuevo Leon, Coahuila and Chihuahua
    - Assessment studies of crop irrigation with sewage waters in the Valley of Juarez, Chihuahua
    - Assessment studies of the environmental impact of vehicle concentration in international crossings
    - Assess the environmental impact of settlement of industries close to international crossings
    - Assess the impact of climatic changes in border populations
2. Implementation of analytical methods for the qualitative and quantitative detection of pollutants in air, soil, water and foodstuffs.
  - 2.1 Justification
    - Lack of application of qualitative and quantitative standardized and comparable methods for the compilation of information on pollutants
  - 2.2 Relevant aspects to the U.S.-Mexico Border
    - Evaluate mathematical and other methodological models to make data from the two countries comparable
    - Assessment of pollutant analytical methods used in the border, including the standards used

3. Implementation of comparable methods for the analysis and control of occupational hazards.
  - 3.1 Justification
    - Lack of validated methods to identify and assess occupational risks in border populations
  - 3.2 Relevant aspects to the U.S.-Mexico Border
    - Studies to assess methodologies aimed to the identification of occupational risks due to pesticides in border populations
    - Studies to assess methodologies aimed to the identification of occupational risks due to heavy metals in border populations
4. Determination of the effect of environmental pollutants on the cognitive functions of individuals and the population.
  - 4.1 Justification
    - Lack of studies demonstrating the relationship between pollutants and cognitive functions of border populations; the environmental pressure that is exerted on the population of the border and influences in life styles; the mobility that exists in the border population; existence of schools in unsafe and contaminated environments.
  - 4.2 Relevant aspects to the U.S.-Mexico Border
    - Assessment of cognitive functions in children coming from different economical states
    - Assessment of cognitive functions in children exposed to diverse air, soil, and water contaminants
5. Development and implementation of safe methods for the elimination of solid waste (tires) in urban and rural areas.
  - 5.1 Justification
    - Lack of sites and mechanisms for handling and confinement of solid and agricultural wastes
    - Lack of mechanisms for re-use, reduction and recycling of solid wastes (agricultural and urban)
  - 5.2 Relevant aspects to the U.S.-Mexico Border
    - Assessment of the environmental impact of burning used tires by the brick industry of the border
    - Demonstration projects on alternative energy sources for the brick industry of the border
    - Health implications of rodent and other fauna originated by the lack of appropriate mechanisms and sites for solid waste disposal



- Studies on the impact of awareness and education of projects aimed to train border communities on the utilization of alternative construction and sanitary facilities
  - Demonstration projects on community organization and participation for the safe elimination of solid waste in urban and suburban areas
  - Development of studies to provide environmental safe recycling or disposal of used tires
6. Analysis of the vulnerability of border localities to environmental disasters, including response capability to contingencies.
- 6.1 Justification
- Current political tension between the United States and Afghanistan; large number of border crossings; migration; poverty; new improvised settlements in border cities; high crossing of chemical transportation.
- 6.2 Relevant aspects to the U.S.-Mexico Border
- Assess border capability to respond to natural and man-made disasters
  - Risk assessment of chemical spills from industry, transportation etc.
  - Assess housing quality and its impacts on health of the population
7. Evaluation of the effect and management of agro chemicals on the health of individuals and the population in specific localities, with an emphasis on agricultural workers and their families.
- 7.1 Justification
- Large amount of chemicals used in agricultural activities along the border; high migration of agricultural workers; inadequate use of pesticides in agriculture.
- 7.2 Relevant aspects to the U.S.-Mexico Border
- Research on impact of pesticides on farm workers
  - Behavior and culture studies of migrant farm workers that facilitate exposure to pesticide and prevent adequate and timely treatment
  - Research on specific gender, age and ethnic group vulnerability to pesticides
8. Evaluation and monitoring of environmental health indicators, including the development of techniques for the monitoring of pollutants in air, soil, water and food.
- 8.1 Justification
- Pollution and diseases related to pollution are one of the main concerns of border populations and health officials; the trend of industrialization of the border will increase the risk for pollution-related diseases; lack of standardized environmental health indicators for the U.S.-Mexico border

- No comparable data or data collection methodologies
- 8.2 Relevant aspects to the U.S.-Mexico Border
- Analysis of existing binational policies and norms towards the harmonization of terminology and environmental health policies
  - Evaluate existing and new programs using environmental health indicators
  - Development of appropriate technology for the measure of environmental health indicators
9. Risk assessment of zoonoses originated by keeping pets in urban areas, animal production and/or noxious fauna and wild animals.
- 9.1 Justification
- Lack of ordered information on local prevalence of zoonosis; increasing populations of pets in urban areas; presence of exotic animal species in urban areas; lack of knowledge about the impact of rodent and other unwanted fauna populations on human health of border populations; increased use of wild animals as pets.
- 9.2 Relevant aspects to the U.S.-Mexico Border
- Assess risk factors for Chagas disease in Texas
  - Assess risk factors of wild rabies in Nuevo Leon, Texas and Arizona
  - Assess risk factors for Hantavirus human infection along the border
  - Assess impact of rodent populations changes on human health
  - Assess impact of urbanization and industrialization of border communities on wild fauna and zoonosis propagation through wild animal reservoirs
  - Risk assessments on toxoplasmosis and rabies in urban areas
  - Risk assessment on exotic species as pets
  - Assessment of brucellosis situation in migrant populations
10. Incidents caused by venomous animals. Epidemiological characterization of incidents caused by venomous animals in urban and rural localities. Development of antidotes and patient care methods.
- 10.1 Justification
- Lack of epidemiological surveillance on incidents caused by venomous animals; lack of public awareness; lack of a toxicology centers network
- 10.2 Relevant aspects to the U.S.-Mexico Border
- Studies to identify venomous animals in different geographic areas and define population at risk
  - Assess knowledge, perception and attitudes of border population regarding venomous animals
  - Assess appropriateness of a surveillance system on incidents caused by venomous animals

- Assess protocols for emergency care of patients attacked by venomous animals of the area
  - Develop and test antidotes for venomous animals of the area
11. Evaluation of hazards caused by the transportation, storage and disposal of hazardous substances and chemicals, which includes studies on methods for remediation procedures.
- 11.1 Justification
- Increased transportation of hazardous materials across the border; lack of knowledge of institutional and human resources capable to provide emergency response for hazardous substances, spills or accidents
- 11.2 Relevant aspects to the U.S.-Mexico Border
- Evaluate the impact on human health of relevant documented accidents involving chemical and other hazardous materials
  - Assess effectiveness of the process of repatriation of hazardous materials
  - Risk assessment studies of the process of repatriation of hazardous materials
  - Assess capacity of border communities to respond to accidents involving hazardous materials
12. Studies of the situation and causes of congenital malformations in specific border localities, and the development and evaluation of preventive interventions with folic acid.
- 12.1 Justification
- Congenital abnormalities is one of the three first causes of infant death in border populations; high incidence of neural tube defects in some areas of the border
- 12.2 Relevant aspects to the U.S.-Mexico Border
- Analysis of the incidence of congenital malformations along the border
  - Assess effectiveness of current surveillance systems
  - Evaluate intervention projects for prevention of congenital malformations currently in place along the border
  - Studies on the relationship of congenital malformations with environmental contamination

## AREA: HEALTH CARE SYSTEMS AND SERVICES AND HUMAN RESOURCES

### LINES OF RESEARCH

1. Situational analysis, including distribution, coverage, available resources, the identification of disparities between countries, between border localities and states, and within each country.
  - 1.1 Justification  
Need for baseline data to compare the health systems of both countries and also to use them as a diagnosis of the situation. Differences on health status between different income groups and between rural and urban border communities. Need to document and compare different financing systems between States and binationally. Disparities in Medicare and Medicaid reimbursement rates along the border and within states. Information is needed to make arguments for the changes in legislature. Demography of border communities is changing at a fast rate.
  - 1.2 Relevant aspects to the U.S.-Mexico Border
    - Create and assess protocols (including definitions and denominators) in order to compare data on health services from both sides of the border
    - Create and assess systems for continuous data collection
    - Assess distribution, coverage, and availability of resources at the local level
    - Analysis of health care costs and their impact on health care management
    - Analysis of family care-giving issues, from home health care, assisted living, hospice, and death and dying issues
    - Assess existing infrastructure of AIDS care and prevention along the border (laboratory, providers, NGO's)
2. Studies on the quality of different health care services provided to the population. Identification of disparities in service quality between rural and urban areas.
  - 2.1 Justification
    - The belief of low quality health care services in Mexico is preventing the utilization of Mexican health services by border U.S. residents, limiting access to health services
    - Differences in health among border communities could be originated by differences in quality of health services. The establishment of quality standards will improve health services provided along the border systematically

## 2.2 Relevant aspects to the U.S.-Mexico Border

- Research public perception of health services quality
- Comparison between different communities' public perception of health services quality
- Document and assess differences in quality standards between Mexico and the United States
- Assess processes used to ensure quality (licensing and certification, other)
- Develop and assess demonstration projects on how to improve the quality of services
- Assess the impact of community-based interventions aimed to improve the utilization of health services
- Assess existing initiatives/policies aimed to improve quality of services provided in border communities
- Assess acceptability of health services (including dental services)
- Studies on health support infrastructure and service quality such as clinical testing and diagnostic laboratories

## 3. Analysis of access to care and the identification of limiting factors (including economic, legal, acceptability, cultural, linguistic) of the population.

### 3.1 Justification

Coverage rates by private insurance are low. U.S. border communities have low coverage rates. Rapid population growths in the border make it difficult to plan coverage of health care services. Although people have access to public health services, people still look for private health services. More information on cross-border clients is needed to better plan health services. Private health services are an important source of income for several border communities.

### 3.2 Relevant aspects to the U.S.-Mexico Border

- Document and analyze health resources available on both sides of the border
- Research access to health services of migrant farm workers in both sides of the border
- Assess appropriateness of insurance system to expand access to US service
- Research underlying causes for limited access to health care in specific localities of the border
- Develop and assess demonstration projects providing health services in the Mexican side of the border to U.S. residents as a way to increase access to health care in the U.S.
- Assess the impact of language barriers in quality of services
- Assess of cultural (including language) appropriateness of health care and its impact on quality
- Develop and assess demonstration projects having health professionals graduated in Mexican schools and providing services in the United States,

- as a way to improve access in the United States (including impact in Mexican communities)
- Document and analyze legal barriers for U. S. residents to get health services in Mexico
- Develop and assess community involvement models for improving or broadening access to health care services
- Document and analyze reasons for not retaining health professionals in U.S. border communities
- Develop and assess models aimed to health professional retention in U.S. border communities

4. Analysis of health care management including the development of cost/effectiveness and cost/benefit models and studies.

4.1 Justification

Health services are becoming more expensive every day. Despite proving efficiency, preventive models have little support when compared to clinical models. Emergency services of border medical facilities are often overused. Programs used in one country could be used in the other. Administrative procedures are getting more and more expensive in the U.S. Need to identify binational models responding to binational needs.

4.2 Relevant aspects to the U.S.-Mexico Border

- Study appropriateness of the implementation of Mexico's universal immunization program in the U.S.
- Evaluate cost effectiveness of health promotion projects currently in place along the border
- Develop and assess demonstration projects for binational systems to follow patients (i.e. tuberculosis card, immunizations card)
- Develop and assess demonstration projects for universal or binational codification for patient's records, including dental patients
- Evaluation of models for institutional networks or coalitions oriented to binational service provision and studies on funding models
- Assess and compare administrative costs of different health care models currently in place along the border
- Studies related to social, political and economic impact of "defensive medicine" in the border
- Assess implementation of HMO's in Mexico

5. Studies on human resources for health; availability on the border by discipline; ways for developing human resources and an analysis of the quality of their preparation.

5.1 Justification

Need to improve quality of health services provided in border communities; Prepare health professionals according to the needs of border communities;  
 Improve distribution of health professionals among border communities;

U.S. health personnel not culturally trained; Need to adjust preparation of health professionals to border population growth and aging if working at the border; it is more culturally appropriate to license health professionals from Mexico than from other countries; There are already some initiatives to license Mexican professionals, (dentists, MDs) to work in California; Existence of telemedicine technology along the border.

#### 5.2 Relevant aspects to the U.S.-Mexico Border

- Document and assess regulatory framework for human resources (licensing, certification)
- Develop and assess demonstration projects using social service interns from Mexico in the United States
- Create and assess demonstration models using U.S. curriculums and Mexican universities and student's exchange programs
- Prospective analyses of health-related schools on the border
- Assess residency training for MDs from Mexico (Funds for hospitals who train residents)
- Assess current projects oriented to get more Hispanic students in health professions in the U.S. Also health career advancements
- Develop and assess demonstration projects oriented to join efforts between US and Mexican health schools to provide training accredited in both countries
- Document and compare accreditation regulations between the U.S.-Mexico and U.S.-Canada
- Assess availability along the border of technology needed for telemedicine
- Develop and assess demonstration projects on telemedicine (for both training and service provision purposes)

### 6. Studies of the pharmaceutical market on the border

#### 6.1 Justification

High demand of Mexican drugs by U.S. patients; Existence of a black market of medicines on the border; U.S. patients use contraceptives made and sold in Mexico.

#### 6.2 Relevant aspects for the border

- Document and analyze cross border dynamics of the pharmaceutical market
- Assess impact of self-medication in the border (including resistance to antibiotics, screening of some diseases and impact in follow up of patients and contacts for the case of infectious diseases)
- Assess degree and extension of automedication among health personnel

### 7. Studies on cross border utilization of alternative medicine or “not-approved medicine”

#### 7.1 Justification

High concentration of establishments dedicated to alternative medicine or “not-approved medicine” in the Mexican border; Frequent utilization of alternative medicine by U.S. patients.

7.2 Relevant aspects for the border

- Document types of services provided by alternative medicine establishments
- Studies to document a profile of users of alternative medicine and investigate their reasons for utilization of alternative medicine
- Document regulations on alternative medicine in both sides of the border
- Analyze effectiveness and efficiency of alternative medicine provided along the border
- Assess complications related to the utilization of alternative medicine



## AREA: HEALTH, SOCIETY AND DEVELOPMENT

### LINES OF RESEARCH

1. Studies on economy development and its influences on health and the environment (economic globalization, tourism).
  - 1.1 Justification: Border communities are highly impacted by changes in the economy of both countries; Economic integration (NAFTA) is impacting border communities; New and high health technology available in some border communities; Two cultures collide at the border and influence each other; High cross border mobility and migration of families.
  - 1.2 Relevant aspects to the U.S.-Mexico Border
    - Document economic, social and educational disparities between the two borders and along the border
    - Document impact of NAFTA on the health of border populations
    - Assess impact that the devaluation of Mexican currency has on health of border communities
    - Assess the relationship between income and health in different border localities
    - Research impact of acculturation on the prevalent border diseases (i.e., diabetes, tuberculosis, hepatitis, heart diseases, etc.)
    - Develop models and assess impact of the inclusion of the topic of health in the curricula of elementary schools
2. Migration: characterization cross border flows and settlements, and their social, cultural and economic impact; Characterization of migrant health and health care.
  - 2.1 Justification

Legal and non-legal migration is increasing; Large groups of border communities commute on a daily basis; Large number of families from the border is involved in agricultural activities; Migrant farm workers are characterized by low education, low income and specific health risks.

Existence of cultural barriers in border populations; High costs of medical services and limited access of immigrants to them; The migratory status (legal or undocumented); Existence of contagious diseases and its propagation among vulnerable groups; Risks of adopting a new culture; Stress of the migration, unsafe conditions of work; Lack of health insurance; Lack of knowledge about health resources.
  - 2.2 Relevant aspects to the U.S.-Mexico Border

- Study and characterized risk factors of specific migrant groups (including elderly coming from Southern countries) based on place of departure, city of new residence, type of work, etc.
  - Study barriers that migrant groups have to access health services
  - Study impact of specific migrant groups in the dissemination of specific diseases
  - Study aspects of mental health in migrant groups including those associated to leaving relatives in place of origin
  - Assess impact of governmental programs oriented to support migrant groups
  - Prospective studies of health status in “Colonias”
  - Evaluation of socio-cultural knowledge of patients perspective regarding sexual issues and HIV/AIDS among migrant population
3. Unequal distribution of wealth: characterization in urban, suburban and rural areas and its impact on health and the environment.
- 3.1 Justification  
Border is being characterized by a rapid economic growth. However, large groups are being left out of the benefits of such economic growth due to inequities in income. Those inequities are related to inequities in health.
- 3.2 Relevant aspects to the U.S.-Mexico Border
- Develop protocols to study inequities in border communities
  - Assess self care among different social and economic groups
  - Assess differences in generation of solid waste among various income groups
4. Documentation of inequities of different kinds such as social, economic, cultural, ethnic and gender; Identification of causes and conditions.
- 4.1 Justification  
Inequities have a direct impact on morbidity and mortality; Inequities are the underlying causes of violence and substance abuse, two prevalent health problems of the border.
- 4.2 Relevant aspects to the U.S.-Mexico Border
- Research gender, ethnic and income inequities that can result in higher mortality and morbidity in specific groups of the border
  - Develop and assess demonstration projects oriented to diminish inequities in groups of the border
  - Assess regulations on health and environment leading to disparities and inequities
5. Binational analysis of legislation, regulations and standards, the identification of obstacles (attitudes) and identification of models related to binational cooperation.
- 5.1 Justification

Binational collaboration has not been enough to solve health problems of the border; Legal barriers to exchange data, donate equipment, transport patients and diagnostic samples; Use of U.S. monies has hindered binational collaboration; Limited binational collaboration; lack of information on code regulations, politics and agreements.

5.2 Relevant aspects to the U.S.-Mexico Border

- Research legal barriers for binational collaboration

6. Research on inter-sector collaboration, in particular for the health and development relationships; health and tourism; food production and nutrition.

6.1 Justification

Complexity of health problems demands simultaneous and coordinated actions from several sectors; Activities carried out in other sector have a direct impact on health; Social sector (non-governmental organizations) is playing an important role in binational collaboration for health and environmental protection programs.

6.2 Relevant aspects to the U.S.-Mexico Border

- Study historical aspects of binational collaboration
- Research impact of activities of other sectors (tourism, commerce, agriculture industry) on health
- Study role of NGO's, private foundations and communities in binational collaboration
- Develop and assess demonstration projects for improving binational collaboration through community and NGO's involvement

7. Ongoing analysis of human behavior and living conditions among high-risk populations (social, cultural, ethnic and gender) and their impact on health, disability, and quality of life.

7.1 Justification

The U.S.-Mexico border is an area where two cultures collide; More knowledge is needed to understand behavioral changes in-groups exposed to different cultures; Many of the prevalent diseases of the border are behavior-related; Protective factors for some health indicators (i.e. infant mortality) have been identified in specific border groups.

7.2 Relevant aspects to the U.S.-Mexico Border

- Research social and cultural aspects to identify protective and risk factors of specific groups (including Native-Americans) of the border related to prevalent diseases (violence, substance abuse, diabetes, tuberculosis, hepatitis, AIDS)
- Research the impact that acculturation of border and migrant populations have on health
- Develop and assess demonstration projects to change non-healthy behavior and attitudes of specific border groups
- Analyze the impact of urban habitat and industries, in general, on health

8. Psychosocial studies on health problems among high-risk populations in the areas of mental and behavioral disorders, substance abuse and alcoholism, AIDS, violence, accidents and terminal diseases.

8.1 Justification

Little is known about mental health along the border; There is a need to develop instruments and methods to be used specifically in border communities; Substance abuse is increasing along the border (Cocaine consumption has increased by 200 %.); Increased span of life is generating an aging population in the border; Mental health problems, including addictions are stigmatized not only by the public but also by policymakers.

8.2 Relevant aspects to the U.S.-Mexico Border

- Research factors related to substance abuse increase along the border
- Research the impact of family disintegration, negligence, school dropout rates as some of the underlying causes of substance abuse in the border
- Identify the needs on mental health of the aging populations of the border
- Assess mental health disorders in migrant population
- Research access to mental health services in rural and small communities
- Research perception and attitude towards mental health among border residents and border policy-makers

9. Reproductive health: documentation of specific problems related to prenatal care; maternal health and mortality; early pregnancy, abortion, sexually transmitted diseases, AIDS, sexuality disorders; family planning programs and the development of new contraceptive methods.

9.1 Justification

High incidence of teen pregnancy along the border; Limited access to prenatal care; Differences in regulation of abortion among countries and states; Some specific areas of the border with higher incidence of sexually transmitted diseases including AIDS; High cervical and breast cancer death rates in the Mexican border.

9.2 Relevant aspects to the U.S.-Mexico Border

- Research protective and risk factors causing the differences of AIDS death rates between border communities
- Research access to prenatal care in the first trimester of pregnancy among women in the border area
- Identify cultural beliefs as barriers for prenatal care in both sides of the border
- Research migration frequency of pregnant women looking for prenatal care in both sides of the border
- Research use and access to contraceptive methods among women in both sides of the border

- Identify cultural beliefs and economic barriers for use of contraceptive methods among women on both sides of the border
- Identify policies affecting access to contraceptive methods in the U.S. side of the border
- Research knowledge and attitude of border communities towards abortion
- Research underlying causes of high cervical cancer death rates in the Mexican border
- Research underlying causes of high incidence of teen pregnancy
- Design and assess demonstration projects to reduce teen pregnancy along the border

10. Studies on eating habits and health consequences, malnutrition, nutritional deficiencies and their effect across in the life course; Description of functional consequences of micronutrient deficiencies.

#### 10.1 Justification

Increased eating-related diseases, including obesity along the border; High incidence/prevalence of diabetes in border communities; High incidence of neural tube defects in some areas of the U.S.-Mexico border; Breast-feeding is diminishing among nurturing mothers; Mental disorders are being identified among babies nurtured with formulas containing “Omega 3”

#### 10.2 Relevant aspects to the U.S.-Mexico Border

- Assess cultural and behavioral factors associated to child obesity
- Research risk factors of type II diabetes in border populations
- Research cultural dietary aspects of border populations
- Research impact of increasing access to junk food in border communities
- Develop and assess demonstration projects oriented to improve dietary habits in specific groups
- Develop and assess demonstrations to increase breast-feeding
- Assess current intervention projects oriented to diminishing neural tube defects
- Research on the impact of marketing strategies of food and beverage companies

11. Adopt, adapt and develop intervention models for organized community groups for health promotion and environmental protection issues.

#### 11.1 Justification

The participation of community-based groups has increased along the border; There is a need to provide the community with tools for self care; The community should be involved in providing ownership and sustainability to the initiatives implemented by the health sector.

#### 11.2 Relevant aspects to the U.S.-Mexico Border

- Develop and assess demonstration projects of community participation, including promoters' projects to approach border health and environmental problems
- Generate tools and methods for the evaluation of interventions in which the community is involved
- Assess impact of community involvement in legislation and policy making towards healthier and safer border communities

12. Develop and assess demonstration projects on procedures for community involvement in research and utilization of scientific knowledge in community-based health and environmental projects and programs.

#### 12.1 Justification

Community-based organizations do not use research outcomes as often as they should; There are several border initiatives as the "Safe and Healthy Sister Cities" initiative and Frontera Saludable 2010 that incorporate the community in intervention projects; There is a need for University participation in community-based organizations.

#### 12.2 Relevant aspects to the U.S.-Mexico Border

- Assess how much currently in place projects involving community-based organizations are using scientific knowledge and border research outcomes in their respective actions
- Assess what have been the efforts of border universities to provide border communities with scientific knowledge and research methodology for the implementation of their respective actions
- Create and assess methodologies for the involvement of communities in research

13. Study the process of ethics and how they are being applied in border health.

#### 13.1 Justification

The understanding of ethics differs from culture to culture; Ethics should be considered as a crosscutting issue in all border health activities.

#### 13.2 Relevant aspects to the U.S.-Mexico border

- Research understanding of ethics among border researchers
- Research what processes have been used to consider ethics in border health issues
- Develop and assess protocols for the consideration on ethics in binational health projects

14. Study the impact of technology and its accessibility in border health.

#### 14.1 Justification

Technology and its accessibility has been identified as an important factor for health improvement; Some border communities have access to technology, while others don't.

14.2 Relevant aspects for the U.S.-Mexico Border

- Research the impact that Internet access has on community health
- Develop and assess acceptability, costs and impact of projects using telemedicine
- Develop and assess demonstration projects of binational telemedicine projects