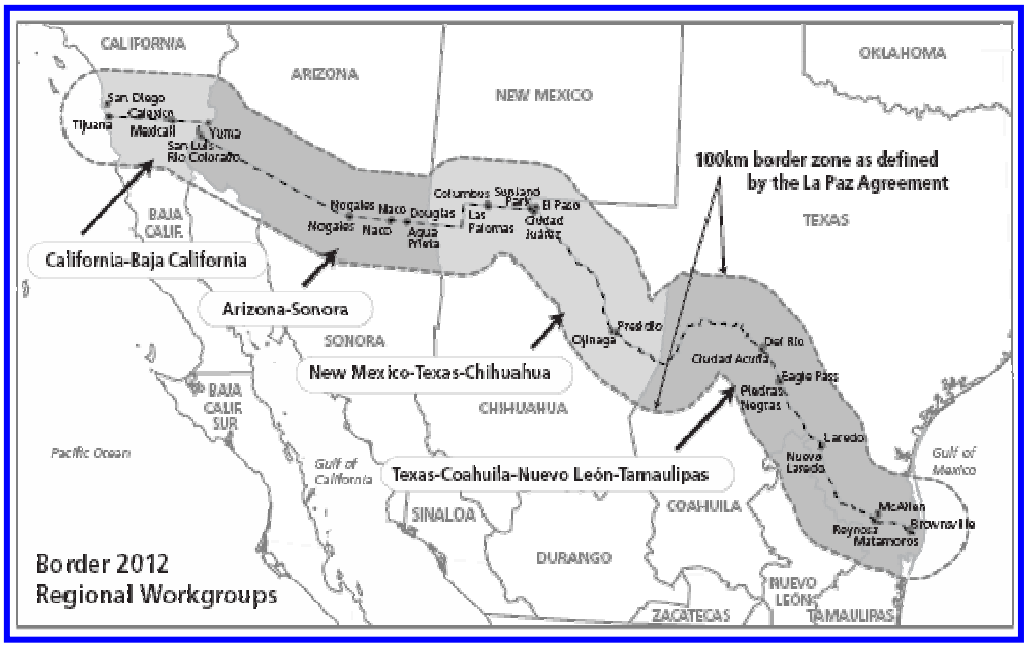
Gathering Bi-national Information on Environmental Monitoring and Health Tracking/Surveillance Data Related to Air

Dear Reader,

This document and the data contained within are the property of EPA, prepared by RTI under contract number 05D000952. The assignment was intended to be a "quick turnaround" snapshot of data availability related to air quality and respiratory diseases along the US-Mexico border. The documents have been reviewed and accepted by EPA; however, because this was intended to be a very preliminary assessment of available data, EPA has accepted the reports and data therein on face value. This project arose from binational discussion by the Border 2012 Environmental Health Workgroup during the 2005 National Coordinators Meeting and will provide important background information for the Air Environmental Public Health Indicators team that has been set up. More information about this task may be found at www.epa.gov/ehwg.

Gathering Bi-national Information on Environmental Monitoring and Health Tracking/Surveillance Data Related to Air

DRAFT—Summary Report



Prepared for

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1.0 Introduction

Border 2012 is an environmental partnership among federal, state and local governments in the United States and Mexico, and with U.S. border tribes. The mission of the Border 2012 program is:

> …to protect the environment and public health in the U.S.-Mexico border region, consistent with the principles of sustainable development.

The air quality component of this multimedia program is the focus of this report. RTI was tasked with investigating databases in both the U.S. and Mexico that contain information on environmental quality (via ambient air quality monitoring) and human health conditions in the U.S.-Mexico Border region. In order to eventually develop environmental health indicators that link changes in the ambient environment to changes in health outcomes, this initial scoping exercise was necessary to investigate the quantity and quality of extant environmental monitoring and health tracking/surveillance data.

The pollutants and health effects designated for this task were:

Air Pollutants	Health Conditions
Ozone	Asthma prevalence (<18)
PM_{10}	Acute respiratory infections (<5, morbidity rates)
Carbon monoxide	Acute respiratory infections (mortality rates)
Nitrogen oxides	Chronic obstructive pulmonary disease
Sulfur dioxide	(COPD, mortality rates)

This report presents RTI's methods for identifying databases and other information resources, summarizes our findings, attaches a spreadsheet of select databases, provides a list of useful contacts, describes and discusses information gaps revealed, and presents recommendations to strengthen the Border 2012 program's data foundation for selecting appropriate indicators.

2.0 Methods Of Information Collection

RTI's approach was developed under the guidance of EPA as well as recommendations from in-house experts in air quality monitoring and epidemiology. Our approach for this one-month scoping study consisted of establishing personal contacts with government officials in the fields of air quality and health, performing internet research of government agencies' websites where data collection programs are described, and tapping in-house knowledge of databases developed from past relevant project experience.

2.1 Personal Contacts

EPA provided RTI with an initial set of Mexican and U.S. EPA Regional office contacts and references to facilitate the identification of available data and databases. (See

Appendix A for a list of Mexican contacts.) EPA also introduced RTI to the Southwest Consortium for Environmental Research and Policy (SCERP) with Dr. Rick Van Schoik, as Managing Director. RTI contacted Dr. Van Schoik and reviewed the SCERP website's list of reports. RTI supplemented the list of contacts with names identified by RTI epidemiologists' professional contacts.

Because the list of Mexican contacts numbered more than 30 and because of time constraints, RTI evaluated the individual's position and field of expertise, aggregated names by subject area, and prioritized. RTI determined that while high-level administrative officials were beneficial to the Border program on a policy level, it was the officials with discipline-level responsibility who might provide the most substantive information on database. Therefore, RTI focused our correspondence time on mid-level environmental and epidemiology (health agency) officials. Scripts were written in English and translated to Spanish to give staff consistent dialogue prompts as well as vocabulary most suitable for the subject. Two native, Spanish-speaking staff members who are environmental professionals (one with public health educational background) telephoned the contacts in Mexico. In addition to the telephone calls, staff members followed up by sending the questions posed from the script. Where contacts by phone could not be established, staff sent an introductory email to prospective contacts and attached the Spanish version of questions.

Telephone conversations with U.S. contacts were conducted by one staff environmental professional with a public health educational background.

2.2 Internet Research

RTI reviewed both Mexican and U.S. websites for information about environmental and health monitoring.

United States – In the U.S., RTI sought information from bordering states' air quality offices:

- California
- Texas
- Arizona
- New Mexico

as well as the U.S. EPA's Border 2012 web page. (http://www.epa.gov/r6border/index.htm)

Mexico – From the phone calls, RTI obtained information about the Automated System of Epidemiologic Surveillance (SUAVE) as being the database that the different Mexican jurisdictions use to maintain their epidemiologic data. An internet search was performed to obtain additional information about SUAVE, and the following site was identified as having the most relevant information:

- http://www.dgepi.salud.gob.mx/nfoepi/index.htm: This website provides access to the data collected under the National System of Epidemiologic

Surveillance (SINAVE) which is a system maintained by the Mexican Health Department with morbidity data that are reported by the different health units, jurisdictions and states. The initial data are collected by the jurisdictions and maintained in SUAVE. Each jurisdiction reports periodically to the Mexican Health Department, which processes the data and makes it available at the SINAVE website.

No national or regional Mexican databases of air quality data relative to the areas of concern were identified. However, as an outcome from one of the phone calls made to Mexican officials, RTI identified a potential source of data for the State of Chihuahua available from the following website:

- www.juarez.gob.mx/ecologia/default.php: This site presents daily statistics about PM10, CO and ozone as well as trend data for different years for the State of Chihuahua. The site is maintained by The Chihuahua "Dirección General de Ecología y Protección Civil".

2.3 In-house Knowledge of Existing Databases

RTI has performed numerous health effects studies and, as a result, has compiled lists of data sources for respiratory illnesses and other health effects. The project team sought RTI staff epidemiologists and health economists with this knowledge and gathered database information presented in this report.

2.3.1 Health Effects

In order to identify and evaluate databases related to surveillance of health indicators in border states, RTI started with the pre-existing list of databases that was in the project's technical proposal. To enhance this list, RTI searched the Centers for Disease Control's (CDC) website, the health department web sites from the four border states (Arizona, California, New Mexico, and Texas), and performed an internet search, e.g., using the term "health surveillance data".

The national health surveys were the most obvious sources of respiratory health-related data. Perhaps the most valuable sources of self-reported health conditions such as the National Health Interview Survey (NHIS), National Health and Nutrition Examination Survey (NHANES), Behavioral Risk Surveillance System (BRFSS) and State and Local Area Integrated Telephone Survey (SLAITS) are located on the CDC's website. Other sources, such as Medicare data (obtained by CMS) and Healthcare Cost and Utilization Program (HCUP) data include information collected from hospitals. The U.S.-Mexico border states' departments of health websites (AZ, CA, NM, and TX) also provided information such as hospital discharge data, prevalence tables, and mortality rates. Some of the data found on those states' websites (e.g., hospital discharge data) were collected to meet federal requirements.

2.3.2 Air Quality Data

RTI's environmental scientists are experienced with national air quality databases for the pollutants of interest. These databases were entered into the spreadsheet described in Section 3.0. In addition, states, tribal and local air pollution control agencies monitor and compile air quality data from local and state-level monitoring networks. The data receive a quality assurance review and are then entered into national databases maintained by EPA in the Air Quality (AQS) System Database. This database is the primary tool used by EPA to assess the nation's air quality. The AQS includes data from several stations along the border region, including some sites that are located on Mexico's side of the border. The database contains meteorological data, descriptive information about each monitoring station (including its geographic location and its operator), and quality assurance/quality control information. Therefore, working with these national databases can provide the state-level information desired.

2.4 EPA Guidance

Weekly conference calls were conducted between RTI and EPA's NHEERL representatives to discuss RTI's progress and receive guidance on potential sources of information.

3.0 Results

3.1 Application of Communication Strategy

3.1.2 Health Data

- **Mexico** – The majority of contacts provided by EPA were health officials. In addition, one or two names were provided by RTI's epidemiology staff. Telephone contact with Mexican health officials was the most effective data gathering technique in the timeframe established for this effort. RTI was able to reach nearly fifty percent of the contacts attempted. Although the parties RTI contacted were cordial, most were not familiar with the Border 2012 project in sufficient detail to be comfortable supplying in-depth information. They often requested that government officials contact them to request information formally because they expressed concern about sharing information with institutions in a different country without first having the proper authorization. RTI stresses the importance of reviewing the information collected by phone for accuracy because in many cases the people contacted did not have full knowledge of the subject matter being discussed.

  Phone calls were made to 13 people with the following outcomes:

- Nine people provided information over the phone:

  José Luis Aranda Lozano
  Alberto Montoya Flores
  Ricardo Pacheco Elías
  Humaro Barrios Gallegos

Dr. Rembrant Reyes
Gloria Leticia Doria Cabos
César Humar Torres
Trinidad Gerónimo Castaño
Rafael Magaña Sevilla

- Four people were reported as hard to contact:

  Sergio Campos Ramírez
  José Antonio Hernández Uriega
  Gonzalo Nevarez Jaquez
  Vicente Soto Acosta

- **U.S.** – RTI staff's knowledge of data resources, use of the internet, literature search services, and institutional knowledge were the most effective means of gathering information on health effects data resources originating in the U.S.

3.1.3 Environmental Data

- **Mexico** – Most of the people recommended by EPA to contact about air quality worked with Mexican health departments. They said they may use some of the air quality data for their work but they do not collect that data, and in most cases, they do not maintain databases. Some of the people reached identified other institutions, such as universities, that may collect data and maintain databases.

Phone calls were made to three people with the following outcomes:

- One person provided information about the Department of Environment and Natural Resources - Sonora (SEMARNAT), which coordinates the monitoring efforts in the border area of the State of Sonora:

  Francisca Montañez Armenta.

- One person said that he was storing air quality data collected by other institutions in an Excel database:

  Luis Duarte Amador.

- One person said that he did not know of any air quality database, but promised to send information about other institutions that may be maintaining databases:

  Rommel Castañeda López.

  In summary, RTI believes that a combination of internet search for institutions and contacts could produce better results for air quality information, if additional time and resources become available.

- **U.S.** – Telephone contacts with two U.S. EPA staff in Regions 6 and 9 were only introductory. Those contacted wished to look into their staff resources before advancing the phone conversation to detailed information. In Region 6, the workload on staff from Hurricanes Katrina and Rita, most likely led to the lack of follow-on response from the Region's staff. In Region 9, responsibility had shifted from one individual to another which may have impaired the response rate. RTI also contacted SCERP Director, Dr. Rick Van Schoick and reviewed the organization's web site, identifying a number of studies that may be useful. These studies are included in the spreadsheet presented in Section 3.0.

Table 1 presents a list of the most helpful contacts reached in the U.S. and Mexico.

Table 1. List of Useful Contacts

Name	Affiliation	Area of Expertise	Contact Information
Health Related Information			
José Luis Aranda Lozano	Secretaría de Salud, Tijuana	Epidemiology	Phone: 664-638-7311
Alberto Montoya Flores	Secretaría de Salud, Sonora	Epidemiology	Phone: 662-212-1753
Humaro Barrios Gallegos	Secretaría de Salud, Chihuahua	Epidemiology	Phone: 614-439-9900, ext-21518 E-mail: Epi_chi@dgepi.salud.gob.mx
Dr. Rembrant-Reyes	Secretaría de Salud, Tamaulipas	Epidemiology	Phone: 834-312-0815 E-amil: rereyes@salud.gob.mx
Gloria Leticia Doria Cabos	Secretaría de Salud, Jurisdiction IV, Reynosa	Epidemiology	Phone: 899-925-0560 gldoria@salud.gob.mx
César Humar Torres	Hospital Integral, Agua Prieta	Epidemiology	Phone:633-338-1563 E-mail: c_torres70@hotmail.com
Trinidad Gerónimo Castaño	Secretaría de Salud, Ojinaga, Chihuahua	Epidemiology	Phone: 626-453-1664 E-mail: trini141057_@hotmail.com
Rafael Magaña Sevilla	Secretaría de Salud, Jurisdiction I, Nuevo Casas Grandes	Epidemiology	Phone: 636-694-6036 E-mail:jurisdiccionV@hotmail.com
Air Related Information			
Francisca Montañez Armenta	Departamento de Salud Ambiental, Sonora	Environmental health	Phone: 662-212-2135 E-mail: ambiental@salud.gob.mx
Luis Duarte Amador	Departamento de Salud Ambiental, Chihuahua	Biology	Phone: 614-414-8210 E-mail: luisdmc@yahoo.com
Rommel Castañeda López	Departamento de Salud Ambiental, Cohahuila	Environmental health	Phone: 844-430-8844 E-mail: Rommel_castaneda@salud.gob.mx

3.2 Overview of Analyzed Databases

Databases and other data resources identified over the course of this project are compiled in two Excel spreadsheets – one for health and one for environmental (air) quality. The spreadsheet formats were provided by EPA and represent topics that include –

Database name
Organization that developed the database
Database description
Event under surveillance
Indicator parameter and units of measure
Data collection method
Origin of data, e.g., physicians, health or environmental departments
Timeframe of data collection
Location of data collection
Whether data are quality assured and quality controlled
Time between data collection and entry into the database
Software platform
Hardware platform
Name of the database manager and contact information.

Appendices C and D present the two Excel spreadsheets of data sources identified over the course of this project. A total of 73 data sources are listed, consisting of 39 health sources and 34 environmental sources. Thirteen of the data sources originate from Mexico and 60 originate from the U.S.

3.2.1 Human Health Conditions Databases

Data collection practices were similar for the U.S. and Mexico and included hospital and health department data and health surveys. While thirty U.S. health data sources were located, only nine Mexican health data sources were identified. Mexican contacts explained that health data are compiled in a national dataset, rather than by locale.

The most notable gaps in information within data sources were quality assurance and quality control practices, geographic coordinates, and the time between data collection and database entry. Another potential data gap may be related to the databases that contain national health data. If the data cannot be specifically traced to a border area, the national information may not be applicable.

Trends in data availability between states and countries were not entirely evident from the information gathered. At the time of data collection, Mexican personnel were sometimes difficult to contact and often cautious about sharing the information due to a lack of familiarity with the Border 2012 program. As the program becomes more widely known, access to data will most likely improve.

Quality assurance and quality control practices for U.S. and Mexican data were found to be moderate-to-well-documented by both countries. In 22 of the 39 cases, there are specific quality assurance procedures followed for sampling, data collection, and data

verification. However, there is a need for improvement to ensure that the health data are as accurate as possible.

The format of the data includes ASCII, Excel, dBase, SAS, and DBF. The most common format appears to be ASCII text files, but any trends toward a certain format are not evident at this time. As the data are updated over time, obvious trends toward a certain platform may develop.

3.2.2 Environmental Quality Databases

Data collection practices were similar for the two countries and consisted of air monitoring sites along the U.S. and Mexican border. While 30 U.S. health data sources were located, only four Mexican health data sources were identified. Data were too scarce from Mexico to evaluate adequately. Further investigation could be performed if additional time and resources are supplied.

As noted in Section 2.0, state, tribal, and local air pollution control agency monitoring data are entered into national databases maintained by EPA in the Air Quality (AQS) System Database. This database is the primary tool used by EPA to assess the nation's air quality. Therefore, working with national databases can provide the state-level information needed for the Border 2012 program.

The most notable gaps in information within data sources in the U.S. were related to the timeframe and frequency of the data gathering, the number of samples contained in the databases, and the format of the final data. Some of these data gaps may be filled as the databases are researched further.

Data availability in Mexico was not evident at this time due to the contact's unfamiliarity with environmental monitoring programs. As discussed previously, many of the Mexican contacts were health department officials who occasionally use the environmental data but are not involved in data collection or database management.

Trends in environmental database formats were not obvious during this scoping project. As the databases are researched further, obvious trends toward a certain platform may be arise.

Quality assurance and quality control practices for Mexican environmental data were not well documented. This does not necessarily mean that quality assurance protocols are not in place. The Mexican personnel contacted were mostly in health departments. While the personnel may use the environmental data, they do not gather the information or maintain the databases. Therefore they may not be aware of the quality assurance and quality control practices.

Quality assurance and quality control practices for U.S. environmental data are often located on the website with the environmental data. For many databases, the quality assurance documents were available to download. In other cases, the extensive quality assurance procedures followed were referenced.

4.0 Discussion

4.1 Health Data

General Observations

Respiratory infections and asthma were the most common health effects tracked. Data entries referenced respiratory infections in 27 spreadsheet listings, asthma in 28 listings, and chronic obstructive pulmonary disease (COPD) in 10 listings in the spreadsheet.

The health of the general population was tracked most commonly with 30 references by databases, followed by four child-specific and four adult-specific surveillance databases.

The units of health data noted in the spreadsheet included 14 references to prevalence, 19 references to incidence, 10 references to mortality, and 14 references to morbidity.

Geographical representation of health data cited national studies the most (18 references). Although "national scale" data are useful only as reference data and are not for the purpose of yielding information specific to the border region, many of the "national" surveillance studies reference data on state and local levels such as zip codes, metropolitan statistical areas, and counties. Therefore, these national databases may be useful.

Mexico

With few exceptions, all of the Mexican officials contacted have reported that SUAVE (Automated System of Epidemiologic Surveillance) is maintained as a repository/database of the health data of interest. This system and its standard operating procedures are provided to the corresponding institutions by the health department and the nation level health agency. Furthermore, after all the information is stored in the system at the jurisdiction level, it is sent to SINAVE (the National System of Epidemiologic Surveillance), which is maintained by the national health department. Some of the data in SINAVE can be accessed through: http://www.dgepi.salud.gob.mx/infoepi/index.htm.

United States

Perhaps the most valuable sources of self-reported health conditions such as the National Health Interview Survey (NHIS), National Health and Nutrition Examination Survey (NHANES), Behavioral Risk Surveillance System (BRFSS) and State and Local Area Integrated Telephone Survey (SLAITS) are located on the CDC's website. Other sources, such as Medicare and the Healthcare Cost and Utilization Program (HCUP) include data collected from hospitals. The U.S.-Mexico border states' departments of health websites (AZ, CA, NM, and TX) also provided information such as hospital discharge data, prevalence tables, and mortality rates. Some of the data found on those state's websites (e.g., hospital discharge data) were collected to meet federal requirements.

4.2 Environmental Data

General Observations

It is interesting to observe that Mexico has a national system for compiling and managing local health data but not for air quality data. In contrast, the U.S. has a national system for compiling and managing local air quality data but not for health data. This difference in the two governments' data management strategies may hinder the consolidation and evaluation of environmental data along the U.S.-Mexico border. To remedy this difference, additional stakeholders and experts may need to participate in Border 2012 planning for future data collection.

Data collection practices were similar for the two countries and consisted of air monitoring sites along the U.S. and Mexican border.

Mexico

Most of the Mexican contacts were affiliated with health departments. They may use some of the air quality data for their work, but they do not collect that data, and in most cases, they do not maintain databases. Some of the people reached referred to other institutions, such as universities, that collect data and maintain databases.

The lack of information about environmental monitoring made it difficult to determine if the pollutants of interest can be tracked satisfactorily.

United States

U.S. air quality data are available through AQS for the pollutants of interest. However, it should be noted that PMfine (i.e., $PM_{2.5}$) is the emerging PM category of importance. Therefore PMfine monitoring studies should be identified and tracked for the Border 2012 in addition to PM_{10}.

4.3 Explanation of Gaps in Database Analysis

Mexico

The most obvious gap in Mexican health surveillance data was the direct accessibility to state, local, and tribal health surveillance data. Although information appears to be available at the national level through SUAVE, it remains to be determined what level of smaller scale geographic detail is provided.

For the resources identified, the two most significant information gaps in the health spreadsheet dealt with quality assurance/quality control practices and the time lapse between data collection and data entry. However, users of the spreadsheet should treat this observation cautiously because the contacts were not the primary party responsible for the database and may not be fully aware of the database's developmental procedures. Since the health data are compiled and maintained at the national level, it would be optimum to formally obtain documentation on the database from the managing government entity.

United States

The type of U.S. information collected about asthma, COPD, and other respiratory conditions varied and did not always offer a precise match to the health indicators of interest. For example, hospitalizations for asthma are quite useful for environmental health surveillance, especially in those states where data can be summarized by facility. However, the contract specifies asthma prevalence, which cannot be assessed using hospitalization data. Geographic coordinates were often collected but those data were usually confidential and not available in public use data files. The specific health data collected by these surveys were not always apparent, and locating and reviewing the survey instruments was often required. Data processing and quality control procedures were difficult to locate and were often found in the "User's Manual", if available. Additional research on the list of data sources would fill in some of the current data gaps such as quality control procedures and geographic coordinates.

The most notable gaps in environmental information within data sources in the U.S. were related to the timeframe and frequency of the data gathering, the number of samples contained in the databases, and the format of the final data. Some of these data gaps may be filled as the databases are researched further.

4.4 Recommendations

This scoping study revealed both the need for more contacts knowledgeable about ongoing data collection for the health and environmental parameters of interest. In addition, outreach efforts to inform local health and environmental officials appears necessary to gain buy-in to information sharing. As the information collected during this study was evaluated, additional recommendations were identified. Some of the more significant recommendations are listed below. A more formalized needs assessment may benefit the Border 2012 planning process.

- In order to get information at the level of detail requested in the questionnaires EPA should officially contact the corresponding institutions, so an agreement of cooperation is in place. Most people have expressed concern when sharing information with institutions in a different country without first having the proper authorization.

- The information collected by telephone should be reviewed carefully for accuracy. Many times the people contacted did not have full knowledge on the subject matter.

- The results of this work should be shared with the Mexican officials contacted as a way to follow-up on the initial communications and to motivate a better response to future inquiries.

- Another attempt should be made to identify and interview EPA regional personnel knowledgeable about air quality monitoring studies in the U.S. Border states.

- SCERP's studies listed in the environmental spreadsheet should be reviewed more carefully. Although these studies have limited scope and timeframes, they provide site-specific information that my benefit the Border research and tracking strategy.

- Mexican air quality officials and university researchers need to be identified and interviewed to collect information on monitoring studies.

- PMfine should be included in the scope of pollutants as PM10 monitoring stations get replaced by PMfine monitors.

- The air monitoring stations in the Border 2012 area should be inventoried for each pollutant of interest, noting geographic coordinates, monitor managers, and other valuable information.

- The demographics of residents in the Border 2012 area should be documented and compared to the health surveillance data to clarify data needs.

Appendix A

Mexican Contacts Provided By U.S. EPA

Air Contacts in Mexico

Members of the Air Indicators Team of the EHWG	
Dr. Gerardo Diaz Universidad Autónoma de Baja California gerardodiaz@uabc.mx	Dr. Margarito Quintero Nuñez Universidad Autónoma de Baja California maquinu@iing.mxl.uabc.mx
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Chihuahua Enrique Suarez (also an air indicators team member) FEMAP (Federacion Mexicana de Asociaciones Privadas) esuarez@femap.org	**Nuevo Leon/Coahuila/Tamaulipas** Norma Mota Universidad Autónoma de Coahuila nmota@mail.uadec.mx

Instituto Nacional de Salud Pública
Isabel Romieu Instituto Nacional de Salud Pública Avenida Universidad 655, Colonia Santa Maria Ahuacatitlan Cuernavaca, Morelos 62508, México Phone: 52-777-101-2935 Fax: 52-777-311-1148 E-mail: iromieu@correo.insp.mx

Comisión Federal para la Protección contra Riesgos Sanitarios (COFEPRIS)
Rocío Alatorre Monterrey # 33 piso 10o, Col. Roma México, D.F. 06700, México Phone: (011-52) 55 5514-8572 FAX: (011-52) 55 5514-8557 E-mail: rocioal@salud.gob.mx

Appendix B

English And Spanish Versions Of Scripts Used In Telephone Conversations

Script And Questions For Border 2012 Air Indicators Phone Calls

Hello, my name is _____. I am with RTI International, and I am working under contract to the U.S. Environmental Protection Agency to support a Mexico-United States environmental quality collaborative known as Border 2012. The purpose of our study is to gather bi-national information on environmental monitoring and health tracking surveillance data related to air. Our charge is to investigate databases in both the U.S. and Mexico that contain information on air quality and human health conditions in the Mexico-U.S. border region. This region includes your state. The goal is for the Border 2012 collaborative to develop environmental health indicators that link changes in ambient air quality to changes in health outcomes.

This is only a scoping study to determine the quantity and quality of air monitoring and health data available. Our focus is on the following air pollutants:

ozone,
fine particulate matter less than 10 microns in diameter,
carbon monoxide,
nitrogen oxides, and
sulfur dioxide.

The health effects data we are searching for relate to the following:

asthma,
acute respiratory infections, and
chronic obstructive pulmonary disease (COPD).

It was suggested by the U.S. EPA that we contact Mexican health and environmental officials such as you to identify and learn about available data and databases. Would you allow me some time to ask you a few questions?

Thank you.

HEALTH Database Questions

1. Do you know of any Mexican sources of health data or databases related to asthma, acute respiratory infections, or COPD that are epidemiological or surveillance studies or simply record and track information such as visits to a medical facility for treatment, diagnoses, or medication?

2. What is the name of the database?

3. What is the name of the organization where the database is located?

4. What is the health event under surveillance?

    a. Is there an ICD code or case definition for the condition?
    b. Is mortality or morbidity tracked?

c. What is the health outcome tracked, e.g., asthma?

5. What are the units of the data being measured – incidence or rates?

6. Is the entire population under surveillance or is it just a subset of the general population, for example, age, gender, race, or region?

7. Who reports the surveillance data – physicians, healthcare providers, veterans, respondents to formal surveys?

8. How are the data collected?

9. When did data collection begin?

10. When did data collection stop or is it still in progress?

11. What are the geographic bounds where the data are collected?

12. Are the data collected by region such as county, state, or nationally?

13. Are the data QA'/QC'd?

14. How long a period of time is there between data collection and data entry to the database?

15. What is the database's software system? Is it Oracle, Acess, Excel? Something else?

16. Can the database designed for Personal computer use? If yes, what type – Windows? Mac/Tiger?

17. Who has access to this database? Are there patient privacy, confidentiality, security, or access issues?

18. Who manages the database and how can s/he be contacted (email, phone number, affiliation, location)

Thank you for your time. If we have other questions, may we contact you again? If you have additional information, you may contact me at (email address) and (phone number).

Spanish Translation Of Telephone Script With Mexican Health Officials

1. Usted sabe de fuentes de información o bases de datos de salud acerca de incidentes de asma, infecciones respiratorias agudas, enfermedades crónicas de obstrucción pulmonaria, etc., que tengan vigilancia epidemiológica o que estén siendo monitoreados con información como el número de visitas a un centro de salud, los diagnósticos, o el tipo de medicamento?

2. Cuál es el nombre de las bases de datos?

3. Cuál es el nombre de la organización que posee la base de datos?

4. Cuál es el episodio de salud que esta siendo monitoreado?

    a. Hay un código ICD o una definición de la condición de salud?
    b. Qué se esta monitoreando, mortalidad o morbilidad?
    c. Cuál es el problema de salud que esta siendo monitoreado- asma?

5. Cuáles son las unidades de medida - incidencia o tasas?

6. Se está monitoreando toda la población o solo un grupo- de acuerdo con la edad, el género, la raza, la región?

7. Quiénes son los encargados de reportar los casos- doctores, instituciones de salud, veteranos, personas entrevistadas?

8. Cómo se recolecta la información?

9. Cuándo comenzó la recolección de la información?

10. Todavía se esta recolectando información?

11. Cuáles son los limites geográficos establecidos para la recolección de la información?

12. Se está recolectando información de acuerdo a la región- localidad, Estado, País?

13. Se ha evaluado la calidad de la información?

14. Cuánto se tarda la información en ser entrada a las bases de datos?

15. Cuál es el software en el que están las bases de datos- Oracle, Access, Excel?

16. Se puede acceder a las bases de datos a través de un computador personal? Si es del caso, qué tipo – Windows, Mac/Tiger?

17. Quién tiene acceso a estas bases de datos? Son confidenciales?

18. Quién administra las bases de datos y cómo se puede contactar a esa persona- e-mail, teléfono, dirección?

19. Se puede acceder a la base de datos a través de un computador personal? Si es del caso, qué tipo – Windows, Mac/Tiger?

20. Quién tiene acceso a estas bases de datos? Son confidenciales?

21. Quién administra las bases de datos y cómo se puede contactar a esa persona- e-mail, teléfono, dirección?

Script And Questions For Border 2012 Air Indicators Phone Calls

Hello, my name is _____. I am with RTI International and am working under contract to the U.S. Environmental Protection Agency to support a Mexico-United States environmental quality collaborative known as Border 2012. The purpose of our study is to gather bi-national information on environmental monitoring and health tracking surveillance data related to air. Our charge is to investigate databases in both the U.S. and Mexico that contain information on air quality and human health conditions in the Mexico-U.S. border region. This region includes your state. The goal is for the Border 2012 collaborative to develop environmental health indicators that link changes in ambient air quality to changes in health outcomes.

This is only a scoping study to determine the quantity and quality of air monitoring and health data available. Our focus is on the following air pollutants:

- ozone,
- fine particulate matter less than 10 microns in diameter,
- carbon monoxide,
- nitrogen oxides, and
- sulfur dioxide.

The health effects data we are searching for relate to the following:

- asthma,
- acute respiratory infections, and
- chronic obstructive pulmonary disease (COPD).

It was suggested by the U.S. EPA that we contact Mexican health and environmental officials such as you to identify and learn about available data and databases. Would you allow me some time to ask you a few questions?

Thank you.

AIR QUALITY Database Questions

1. Do you know of any Mexican sources of environmental monitoring data or databases related to ozone, fine particulate matter less than 10 microns in diameter, carbon monoxide, nitrogen oxides, or sulfur dioxide?

2. What is the name of the database?

3. What is the name of the organization where the database is located?

4. What parameter is being measured?

5. What is the hazard being tracked?

6. What are the units of the data being measured?

7. How are the data collected (i.e., high volume sampler, particulates, etc.)?

8. What is the analysis method (i.e., pH meter, filtration, speciation etc.)?

9. How often are the data collected, i.e., what is the air sampling frequency?

10. When did data collection/monitoring begin?

11. When did data collection/monitoring stop or is it still in progress?

12. How large is the area where the monitoring occurs?

13. What are the geographic bounds where the monitoring occurs?

14. Are the monitoring data collected by region such as county, state, or nationally?

15. How many data points (i.e., air monitors)are collected?

16. How long a period of time is there between data collection/monitoring and data entry to the database?

17. Are the data QA'/QC'd? Explain, and how can QA/QC procedures be accessed?

18. What is the database's software system? Is it Oracle, Acess, Excel? Something else?

19. Is the database designed for personal computer use? If yes, what type – Windows? Mac/Tiger?

20. Who manages the database and how can s/he be contacted (email, phone number, affiliation, location)

Thank you for your time. If we have other questions, may we contact you again? If you have additional information, you may contact me at (email address) and (phone number).

Spanish Translation Of Telephone Script To Obtain The Information About Air Quality Databases

1. Usted sabe de bases de datos que existan con información acerca de mediciones de niveles de ozono, PM10, monóxido de carbono, óxido de nitrógeno, o dióxido de azufre?

2. Cuál es el nombre de la base de datos?

3. Cuál es el nombre de la organización que posee la base de datos?

4. Cuál es el contaminante que se está midiendo?

5. Cuál es el problema que se esta monitoreando- problemas de salud, problemas de visibilidad, etc.?

6. Cuáles son las unidades de medida?

7. Cómo se están recolectando las mediciones- en medidores de alto volumen, usando filtros para el material particulado?

8. Cuál es el método de análisis- medición de pH, filtración, especiación?

9. Con que frecuencia se recolecta la información?

10. Cuándo comenzó la recolección de la información?

11. Todavía se esta recolectando información?

12. Cuáles son los limites geográficos establecidos para la recolección de la información?

13. Que tan grande es el área cubierta?

14. Se está recolectando información de acuerdo a la región- localidad, Estado, País?

15. Cuántas mediciones son hechas en cada muestreador?

16. Cuánto se tarda la información en ser entrada en las bases de datos?

17. Se ha evaluado la calidad de la información, cuáles son los procedimientos utilizados para evaluar la calidad de la información?

18. Cuál es el software en el que están las bases de datos- Oracle, Access, Excel?

Appendix C

Health Surveillance Spreadsheet

(See file: Appendix C_tables.xls)

Appendix D

Environmental/Air Quality Surveillance Spreadsheet

(See file: Appendix D_tables.xls)