

The Health Effects of Air Pollution on the U.S. Mexico Border: Results of a Series of Focus Groups with Stakeholders

Report written by
The National Center for Farmworker Health
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About the National Center for Farmworker Health (www.NCFH.org)

The National Center for Farmworker Health (NCFH), a private non profit corporation, was established in 1975 and is located in Buda, Texas. NCFH provides information services, technical assistance, and training to more than 500 private and federally funded migrant health centers as well as other organizations and individuals serving the farmworker population.

The mission of the corporation, as established by the Board of Directors is: "To improve the health status of farmworker families through appropriate application of human, technical and information resources."

Vision: "The National Center for Farmworker Health proactively supports the work of migrant health centers and the empowerment of farmworker communities in our mission to improve health status. We are determined to eliminate the barriers to health care and increase access for farmworker families to culturally appropriate quality health care."

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- The residents of Somerton, Anthony, McAllen/Mission area, and Yuma

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PURPOSE

The purpose of this report is to provide community health centers and other interested parties with information and resources for the development of health promotion activities that target respiratory problems attributable to air pollution. The relationship between environmental air pollution and individual health is complex and, in order to be successful, interventions should take into account the perceptions of all stakeholders –community members, health promoters, and health care workers. The information contained in this report summarizes the findings of The Border Environmental Health Project Study, which is based on information collected from nine focus groups with stakeholders in three communities along the United States-Mexico border. The Project was supported with funding from the Environmental Protection Agency (EPA) and the Health Resources and Services Administration, and carried out by the National Center for Farmworker Health (NCFH) in 2006.

EXECUTIVE SUMMARY

The U.S./Mexico border region is an area of rapid industrial growth and home to a large agricultural sector. It is also characterized by extreme poverty and inadequate local resources to provide the necessary infrastructure to support the needs of its growing population. The Community and Migrant Health Centers (C/MHC) in the region that receive funding from the Health Resources and Services Administration (HRSA) provide access to quality primary health care services that meet the needs of the local population. In order to help C/MHCs respond to the community's environmentally related health problems, the National Center for Farmworker Health (NCFH) developed a Border Environmental Health Project, supported with funding from the Environmental Protection Agency (EPA) and HRSA. The overall goal of this project was to increase community health promotion activities targeting respiratory problems attributable to air pollution in three targeted U.S. border communities.

During the formative stage of the project, nine focus groups were conducted on the U.S. Mexico border with local stakeholder groups to determine the community's environmental health needs, the target audience, and appropriate dissemination strategies for a subsequent environmental health education intervention. Focus groups were conducted in April and May of 2006 in Somerton, AZ;

Anthony, NM; and Mission/McAllen, TX with three types of stakeholder groups—community residents, health promoters¹, and health care providers.

Key Findings

Some important conclusions were drawn from the focus groups.



- Perceived contaminants included smoke, fumes, dust, pollen, chemicals, odors, insects, noise, and dead animals.
- All perceived sources of pollution were associated with rapid industrial expansion and inadequate public services.
- Asthma was highly prevalent among community residents, although many other health problems were mentioned in relation to air pollution.
- Participants identified children, senior citizens and people with chronic diseases as especially vulnerable to asthma.
- Some health care providers could benefit from better understanding

¹ Health promoters are also known as *promotores*, lay health workers, and community health workers.

of the problems experienced by the community they serve and the presence or absence of resources to deal with environmentally-related health problems. As such, their treatment recommendations often do not take into account the barriers to compliance with these treatments that community residents face.

- Residents and health promoters lacked the knowledge about government structure and the confidence to address pollution in their community through civic participation.
- Community residents thought that an asthma health intervention could help them by increasing awareness about pollution and its effects on people's health, and teaching people to recognize asthma symptoms and know when to go to the doctor.
- All three stakeholder groups identified health promoters as the best group to deliver asthma information to the community.

Recommendations

- Since early detection of asthma is important, an environmental health intervention should target children through educating parents about asthma, symptoms and treatment. This strategy would optimize early detection among children – one of the most vulnerable groups to asthma.

- Health promoters would be the best vehicle for the dissemination of environmental health education because they have the trust of the community and the time and social connections to reach more community members.
- Providers need more information on how to talk to their patients about the prevention and treatment of asthma so that they can recommend feasible strategies for asthma management to overcome economic and environmental barriers.



- Community members need and want information and tools to change the environment at the community level. An environmental health intervention should include a module on how to engage community members in the civic process and work with government officials to bring about community change.

METHODOLOGY

After conducting a literature review of research and interventions related to air pollution's relationship with asthma in the US-Mexico border region, NCFH conducted a series of focus groups with three stakeholder groups in border communities – community residents, health promoters, and health care providers. The goal of the focus groups was to determine the health needs of the target audience in relation to respiratory problems attributable to air pollution, and the best methods for the dissemination of environmental health information.

In order to be considered for selection, communities had to meet the following selection criteria:

- be located in the US-Mexico border area,
- have a federally-funded community and/or migrant health center (C/MHC),
- and have an active health promoter program.

Based on these criteria, NCFH selected the communities of Somerton/Yuma, AZ; Anthony/Las Cruces, NM; and Mission/McAllen, TX. NCFH scheduled focus groups with health care providers from each of the community's federally funded C/MHCs². Memorandums of collaboration were signed between NCFH and the health promoter

² *Sunset Community Health Center* in AZ, *La Clinica de la Familia* in NM, and *Nuestra Clinica del Valle* in TX

program³ in each community in order to organize the focus groups with local residents and promotoras.

NCFH's contact at each health center organized and recruited staff members, both clinicians and non-clinicians, to participate in the focus groups while contacts at the health promoter programs recruited community residents and health promoters to participate in their respective focus groups. All participants signed an informed consent form in the language that they were most comfortable speaking (Spanish or English) before taking part in the session. NCFH staff provided refreshments and filled the roles of moderator and observer in each focus group.

The focus group guides contained questions to explore the stakeholder's perceptions of local environmental pollution, environmental health problems and related community assets. The focus group guides for health care providers contained 10 questions in English and the guide for residents and health promoters was broken down into 16 questions in Spanish. At the end of the focus group, residents and health promoters were given a 20 dollar stipend for their participation.

³ *Campesinos Sin Fronteras* in AZ, the *promotora* program from *La Clinica de la Familia* in NM, and *Migrant Health Promotion* in TX

DEMOGRAPHIC CHARACTERISTICS OF FOCUS GROUP PARTICIPANTS

Overall, a total of 84 people participated in nine focus groups across three communities— 27 people participated in McAllen, TX, 30 in Yuma, AZ, and 27 in Anthony, NM. In each community, one focus group was held with each of the stakeholder groups—health care providers, health promoters, and community residents. In terms of stakeholder group, 32 community residents, 30 health promoters and 22 health care providers took part. Table 1 shows a breakdown of participants per focus group.

Gender and Age

Table 2 shows a breakdown of gender by stakeholder group. A total of 69 women and 15 men participated in the focus groups. Eighty-four percent of residents and almost 100% of health promoters were female. The group of providers was more gender balanced, with 59% of the group being female.

Table 3 shows the age breakdown for each stakeholder group. The community members and health promoters tended to be older than the health care providers. To illustrate, 63% of community residents and 67% of health promoters were over forty years old, while only 52% of health care providers were over 40.

TABLE 1: DISTRIBUTION OF PARTICIPANTS BY STAKEHOLDER GROUP AND LOCATION, N=84

	Community Residents	Health Promoters	Health Care Providers	Total
TX	10	10	7	27
AZ	11	10	9	30
NM	11	10	6	27
Total	32	30	22	84

TABLE 2: GENDER BY STAKEHOLDER GROUP, N=84

	Community Residents	Health Promoters	Health Care Providers	Total
Male	5	1	9	15
Female	27	29	13	69

TABLE 3: AGE BY STAKEHOLDER GROUP, N=84

Age	Community Residents	Health Promoters	Health Care Providers*
20 – 29	2	5	4
30 – 39	10	5	6
40 – 49	8	14	8
50 – 59	4	4	2
60+	8	2	1
Total	32	30	21

*One provider did not give this information

Occupation of Community Residents

Table 4 shows the reported occupation of the community residents that participated in the focus groups. The majority were women who stayed home to take care of the household. Additionally, there were five farmworkers, two domestic workers, a hairdresser and a student.

Occupation	#
Housewife	22
Farmworker	5
Domestic Worker	2
Retired	1
Hairdresser	1
Student	1

Years Living on the U.S.-Mexico Border

Table 5 shows the breakdown of each stakeholder group's time spent living on the US-Mexico border. Of the three groups, promotoras had lived on the border the longest. In fact, 70% of this group had lived on the border for 15 years or more, as compared to 39% of residents and 33% of providers. Health care providers were the newest arrivals to the border, with over a third having arrived within the last 5 years. This is important to note because a provider's familiarity with the community may be an important factor in understanding the health care needs of the residents and providing appropriate care.

	Residents *	Health Promoters	Health Care Providers*
< 1	1	0	1
1 – 4	4	4	7
5 – 9	8	1	2
10 – 14	6	4	4
15 – 19	4	2	1
20 +	8	19	6
Total	31	30	21

*One community resident and one provider did not provide this information

History of Asthma

Table six shows resident's and promotoras' response to whether they or someone in their family has asthma. Thirty seven percent of residents and 53% of promotoras reported either having asthma or having a family member with asthma.

	Community Residents*	Health Promoters	Health Care Providers**
Yes	11	16	
No	19	14	
Total	30	30	

*Two community residents did not provide this information

**Health care providers were not asked this question

SUMMARY OF GUIDED DISCUSSIONS

Environmental Contamination

An analysis of the information obtained through the focus groups revealed that the three communities were experiencing problems with pollution and poor air quality. Participants identified smoke, fumes, dust, pollen, chemicals, odors, insects, noise, and dead animals as some of the contaminants. The recognized sources of these contaminants were mostly related to rapid economic growth and inadequate public services in the region. These included U.S. and Mexico agricultural industries, construction activities, *maquiladoras* (assembly plants), *fundidoras* (smelting plants), chicken and dairy farms and heavy traffic from cars and 18-wheelers. Infrastructure related sources of pollution were illegal emptying of septic tanks, poor animal control, disposal of dead animals in

water canals, lack of garbage collection, and the illegal dumping and burning of tires, clothes, garbage, and farming debris.



Health Problems

Participants linked many health problems to poor air quality in their communities. These included asthma; allergies; bronchitis; cough;

colds and chest congestion; dermatitis; emphysema; itching eyes, nose, throat and ears; pneumonia; sinusitis; and shortness of breath.



Providers also noted that they have seen an increase in cases of emphysema and advanced lung cancer in both the male and female populations. All of the groups thought that these health problems equally affected both men and women of all ages, although children, senior citizens and sick people could be more vulnerable.

Community residents and promotoras identified asthma as one of the most prevalent issues affecting their community and expressed the need to know more about asthma, its treatment, and how to prevent it. Asthma seemed to be a significant and common problem among the three communities. Residents and promotoras explained that in their communities, there are two types of asthma, "*bronchial and pulmonary*". *Bronchial asthma* is an infection of the bronchial canal; when symptoms get worse and they involve the lungs, then the condition is called, *pulmonary asthma*. These groups also mentioned the popular belief that owning a short haired Chihuahua dog will alleviate asthma symptoms. The idea is that asthma

slowly transfers to the dog, alleviating and decreasing the severity and frequency of asthma attacks experienced by the owner. Familiarity with cultural beliefs like this one allows health workers communicate with community members in a culturally appropriate and effective way.

Various barriers to care came up in the focus groups. For example, residents and promotoras expressed concern with health care costs and their inability to afford medication to control their children's asthma. Additionally, they expressed their wishes for providers to understand the reality of community residents' economic and environmental barriers and adjust their medical advice accordingly. Community residents expressed their concern that nothing can be done to prevent or decrease the problem because the sources of contamination are also their sources of employment (including dairy farms, etc.).

Intervention Strategies

Health care providers thought that although there is an urgent need to improve air quality, communities presently have very few resources to do it. They believed that current prevention and control efforts are limited to encouraging their patients to use protective equipment at work and make life style changes. Since health care providers expressed the importance of early detection--especially in the case of asthma—they recommended designing a community education program targeting the parents of asthmatic children. The program should teach

parents about asthma, its triggers, and the importance of adherence to medical treatment. They identified health promoters as the ideal group to deliver the education intervention to the community.

Community residents identified several benefits that training can bring to the communities--for example: increased awareness about air pollution, being informed about contamination and its effects on people's health, recognizing symptoms and knowing when to go to the doctor. Participants agreed that everybody in the community, including politicians, teachers, doctors, parents, etc., need to know about air pollution and how it affects health. All three groups of community residents expressed great appreciation for the help provided by the health promoter programs. Additionally, they identified health promoters as the best group to deliver this information because they know and understand the community, they can be trained to train others in the community, and they have more time than doctors to explain things in simple terms.

Participants recommended that the training be interactive and take into account how groups learn best. The groups identified how health care providers could help by reinforcing the messages of the promotoras-delivered intervention. Participants suggested that community residents learn more about air pollution and how to make personal changes to decrease it. Suggestions for personal changes included avoiding the open burning of garbage,

removing garbage from private yards, and maintaining yards clean and tidy.

Community Involvement

Health care providers also believed that despite an urgent need to improve air quality, there are very few resources to do it. Although participants from all three communities could name some resources for addressing environmental air pollution, they had limited suggestions for how they could participate in the process. Some suggestions included increasing awareness about pesticides, tobacco and other toxic substances and working to secure proper garbage disposal.

However, some participants conveyed a sense of impotence, disempowerment, alienation and lack of knowledge about government structure and how to address pollution in their community. The majority of community residents and health promoters were unfamiliar with the structure, function, and responsibilities of local government. They also weren't aware of their rights and responsibilities as community residents or how they could work with local elected officials to seek potential solutions such as enforcement of local ordinances.

Many of the needed community-level changes the residents identified related to existing ordinances that needed to be better enforced. For example, residents suggested that officials hold farmers more accountable for following pesticide safety laws, especially in areas near

human settlements⁴. Other suggested strategies for community level change included: 1) encouraging people to vote and participate in community affairs; 2) contacting representatives and inform them that asthma is a significant community problem; 3) taking pictures of garbage piles, abandoned cars, and dead animals and showing them to the authorities; 4) lobbying for changing current environmental policies; and 5) developing relationships with the local representative of the Environmental Protection Agency to create a warning system to notify asthmatics of the level of contamination on a daily basis.

Some participants suggested that laws should be created or reinforced to: 1) preventing construction of houses close to the fields; 2) adopting emission test inspections for motor vehicles; 3) establishing monetary punishment for garbage disposal violators; 4) establishing city services for garbage disposal; 5) establishing garbage pickup campaigns; 6) establishing a recycling program; 7) banning smoking in public places; and 8) limiting burning permits.

⁴ Residents specifically recommended that farmers change pesticide application practices to decrease the effect on the health of the community. Exposure reduction measures included the application of pesticides through irrigation systems, aerial pesticide spraying, and applying pesticides at night, not during the day when children are in school or outside playing.

RELATED RESOURCES:

Literature Review of Asthma and the Environment on the U.S.-Mexico Border:

The Border Environmental Health Project Study included a comprehensive literature review, conducted in 2007, which identified 18 studies related to asthma and the environment on the U.S.-Mexico border. The review yielded the following findings: 1) the use of promotoras is a meaningful way to deliver program and health education information in the border area; 2) asthma is an appropriate focus as it may be more prevalent than previously reported; 3) reduced lung function is observed as pollution levels and frequency of exposure increase; 4) the use of an appropriate curriculum in conjunction with the support of promotoras can motivate people to change habits; and 5) there is a significant need for research and health promotion interventions in the border area on this topic. Please contact NCFH for further information on this literature review.

Community Assets Mapping:

Following the literature review, a border-wide, comprehensive assessment of local area assets was conducted, including best practices currently in place in the border region as well as local resources and contacts related to environmental health. Please contact NCFH for further information on this report.

Development of Training Materials:

Based on the results of the focus groups summarized in this report, NCFH developed a train-the-trainer curriculum for promotoras to teach the community about air pollution; its effect on health; screening, treatment, and management of asthma; and participation in the political process. For further information about the curriculum, please contact NCFH.

Appendix 1: Information and Consent Form in English

Border Health Assessment Focus Group - Informed Consent Health Care Professionals

The National Center for Farmworker Health is conducting a program to assess the assets and needs of federally funded Community and Migrant Health Centers along the U.S./Mexico Border and their ability to address respiratory and cardiovascular illness related to pollution.

The overall goal of the program is to gain a detailed understanding of the needs of Community and Migrant Health Centers along the U.S./Mexico border area. This program will examine the C/MCH's technical assistance and training needs, as well as their current assets, and then design an intervention to address those needs. We are asking you to take part in a focus group discussion. A focus group is made up of 8 to 10 persons who discuss certain topics and address questions with the help of a group leader. The purpose of this focus group is to get your feedback and opinions on airborne contaminants and the prevalence of illness along the U.S./Mexico border. We are interested in what you think. There are no right or wrong answers. The information we get from the focus group will help in the development of educational information pertinent to the topic of airborne contaminants and respiratory and cardiovascular disease.

Conditions

- The group meeting may last one hour.
- All the information that you will share with us during the group will not be given to anyone else.
- The names of the people are not published.
- There is no physical danger or risk for you if you decide to be in the group.
- You may refuse to answer any questions.
- Your decision to join us is voluntary.
- If you have any questions about this program, you may contact us anytime at the numbers listed below.

Sincerely yours,

Hilda Ochoa Bogue, Leadership Development Manager
1-800-531-5120 ext 5454

Participant's Name _____

Participant's Signature _____ Date _____

Witness Signature _____ Date _____

Appendix 2: Information and Consent Form in Spanish

Consentimiento de Participación en el Grupo de Enfoque de Salud Ambiental

El Centro Nacional de Salud para Trabajadores Agrícolas (NCFH por sus siglas en Ingles), esta conduciendo una evaluación sobre las necesidades y los recursos que los Centros de Salud Comunitaria del área fronteriza entre México y Los Estados Unidos tienen para manejar las enfermedades respiratorias causadas o agravadas por la contaminación ambiental del aire.

Este programa examinará las necesidades de asistencia técnica y de entrenamiento, y hará hacer un inventario de los recursos disponibles para manejar los problemas detectados. Una vez estudiada la situación, se creará un programa educativo que pueda aliviar las necesidades identificadas por los participantes de los grupos de enfoque. Estamos solicitando su participación en este grupo de enfoque en el que participarán de ocho a diez personas. El propósito de grupo es coleccionar opiniones sobre el problema de las enfermedades respiratoria causadas o agravadas por la contaminación del aire en esta comunidad.

Nosotros estamos muy interesados en escuchar su opinión sobre este tema y estamos seguros que su participación será muy valiosa. También queremos que usted sepa que para nosotros, **toda la información y las respuestas que usted nos proporcione son correctas**, y que estas serán utilizadas para desarrollar material educativo sobre las enfermedades respiratorias causadas o agravadas por la contaminación del aire.

Condiciones

- La reunión durara 2 horas
- Toda la información compartida solo será usada por NCFH
- El nombre de los participantes no será publicado
- No hay ningún riesgo físico por participar en este grupo de enfoque
- Los participantes pueden rehusar contestar cualquier pregunta
- La participación es estrictamente voluntaria
- Como señal de apreciación por compartir su tiempo y su experiencia con nosotros, los participantes recibirán al final de la sesión, la cantidad en efectivo de \$20 dólares.

Si usted tiene alguna pregunta sobre este programa, usted puede comunicarse con nosotros a los siguientes teléfonos.

Sinceramente,

Hilda Ochoa Bogue -
Leadership Development Manager 1-800-531 5120 Ext. 5454

Yo fui informado(a) por escrito o verbalmente sobre el propósito de mi participación y con mi firma yo indico que estoy de acuerdo en participar.

Nombre del Participante _____

Firma del Participante _____ Fecha _____

Firma del Testigo _____ Fecha _____

Appendix 3: Focus Group Guide for Community Residents and Community Health Workers

Grupo de Enfoque Sobre la Salud Ambiental: Preguntas

1. ¿En su opinión, cuál es la calidad del aire en estas comunidades fronterizas?
2. ¿Creen ustedes que estas comunidades tienen problemas de contaminación del aire?
3. ¿Qué está causando esta contaminación? ¿Cuáles son las causas?
4. ¿Qué tipo de problemas?
5. ¿Cómo afecta estos problemas de contaminación del aire la salud de las personas que viven en estas comunidades?
6. ¿Qué problemas respiratorios sufre la gente de esta comunidad debido a la contaminación del aire?
7. ¿Quiénes son más afectados (niños, jóvenes, adultos, personas de edad avanzada, hombres, mujeres)?
8. ¿Qué se está haciendo en sus comunidades para disminuir la contaminación del aire y mejorar la salud respiratoria de los habitantes de esas áreas?
9. ¿Qué otras cosas creen ustedes que se debería hacer para disminuir esos problemas respiratorios?
10. ¿Qué recursos se utilizan actualmente para ayudar a los líderes comunitarios y al personal médico para mejorar la salud respiratoria de las personas que viven en las comunidades fronterizas?
11. ¿De dónde vienen esos recursos?
12. ¿Qué otros recursos creen que se necesitan para disminuir, mejorar o eliminar esos problemas de salud?
13. ¿Cómo podrían programas de entrenamiento ayudarle a usted o a su comunidad a tratar con los problemas de la mala calidad del aire y los problemas respiratorios que sufren las personas que viven en esta región fronteriza?
14. ¿Qué grupos creen ustedes que debería recibir entrenamiento (i.e. médicos, pacientes, promotoras, otros)?
15. ¿Quién puede ser el mejor grupo para proporcionar dicho entrenamiento (médicos, maestros, enfermeras, educadores de salud, padres de familia, pacientes, promotoras, otros)?
16. ¿Qué otras necesidades de información o comunicación sobre la salud ambiental tiene usted?

Appendix 4: Focus Group Guide for Health Care Providers

Discussion Group Questions

1. What are some of the air quality issues that are affecting the respiratory health of individuals living along the US Mexico Border? What are the sources of these air quality issues?
2. What respiratory health problems are you seeing within the community as a result of these air quality issues, and among what age groups are you seeing these problems?
3. What steps do you currently take to address these air quality issues, and improve the respiratory health of individuals living on the border?
4. What additional steps do you believe are needed to further overcome these health challenges?
5. What resources do you currently use to assist providers and community leaders in improving the respiratory health of those living on the border? Where do these resources come from?
6. What additional resources do you believe are needed to further overcome these health challenges?
7. How could trainings help you or your community to address the air quality and respiratory health issues present along the border?
8. Who do you believe needs to receive these trainings (i.e. physicians, patients, lay health workers, etc.)?
9. Who would be the best group of individuals to deliver such trainings?
10. What information or communication needs do you have?