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AUTHOR	Velasco Mondragon, Hector Eduardo; And Others
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ABSTRACT

As the economic integration of Mexico and the United States intensifies, so does the cross-migration of labor forces. Subsequently, when migrant workers or their families become ill, health care is often disjointed and suboptimal. Binational health data exchange among providers of health care becomes essential. GUAPA (incorporating the first three letters of Guanajuato and the state abbreviation for Pennsylvania) is a demonstration. project in Guanajuato (Mexico) and Pennsylvania that represents a vital step toward the assessment of health risk, epidemiological surveillance, and assurance of quality health care for mobile populations. The pilot system is designed to test the technical, financial, legal, and political aspects of data sharing between the two countries. Demographic and clinical data on Mexican migrant patients are collected and made available to front-line health care providers in Mexico and the United States. Data transfer concentrates on four tracer conditions of binational concern: sexually transmitted diseases, tuberculosis, leprosy, and hepatitis. This chapter presents details on the development of the data transfer system, including system objectives, system design, software and data entry procedures, data analysis, procedures to protect client confidentiality, and preliminary evaluation. While GUAPA demonstrates that the exchange of health information is technologically possible with relative ease and minor expense, a larger challenge is becoming clear--to surmount political, cultural, and economic barriers that impede provision of health care on both sides of the border. (Author/SV)

CHAPTER 12

Binational Health Care for Migrants: The Health Data Exchange Pilot Project and The Binational Health Data Transfer System

CONTRIBUTORS ON BEHALF OF THE TASK FORCE:[1]
HÉCTOR EDUARDO VELASCO MANDRAGÓN, M.D.,
JOHNSON MARTIN, PH.D, AND HENRY STEVENSON-PEREZ, M.D.

As the economic integration of Mexico and the United States intensifies, so does the cross-migration of labor forces. Subsequently, when migrant workers or their family members become ill, health care is often disjointed and suboptimal. Binational health data exchange among providers of health care becomes essential. This demonstration project represents a vital step toward assessing health risk, epidemiologic surveillance, and assuring quality health care for mobile populations. The system is de-

[1]Written on behalf of the Binational Health Data Transfer Task Force, which includes Drs. Carlos Santos-Burgoa, Fernando Chacon-Sosa, Héctor Eduardo Velasco Mondragón and Jorge Oviedo of the Instituto Nacional de Salud Pública, Escuela de Salud Pública de México, Karen Mountain of the Migrant Clinicians Network, Drs. Joe Davis and Eric Svenkerud of Centers for Disease Control and Prevention, Drs. Marta Esquivel Arrona, Armando Pérez-Cabrera, Mario Bronfman, Fidencio Pedraza Magaña and Leticia Zamora Ramos of the Secretaría de Salud del Estado de Guanajuato, Edward Powers and Johnson Martin, Ph.D. of the Pennsylvania Department of Health, Olivia Carter-Pokras, Ph.D. of the Office of Minority Health, Henry Stevenson-Perez, M.D. of the National Institutes for Health, David Wall, Ph.D. and Lea Pellet, Ph.D. of Christopher Newport University, and David Much, Ph.D. of Muhlenberg College.

signed to test the technical, financial, legal, and political aspects of data sharing between the two countries. Demographic and clinical data on Mexican migrant patients are collected and made available to front-line health care providers in Mexico and in the United States. Data transfer concentrates on four tracer conditions of binational concern: sexually transmitted diseases, tuberculosis, leprosy, and hepatitis. This chapter contains details on the development of the data transfer system, including system objectives, system design, software and data entry procedures, data analysis, procedures to protect client confidentiality, and preliminary evaluation.

Introduction

Providers who offer health services to Mexican migrant workers in Guanajuato State, Mexico, and the Commonwealth of Pennsylvania, United States, often confront medical information gaps that preclude the prevention, diagnosis, and follow-up of disease exposure. Therefore, a binational task force comprising representatives from the United States and Mexico met throughout 1993 to discuss strategies to increase the coordination of care. The task force is composed of representatives from the Instituto Nacional de Salud Pública, Escuela de Salud Pública de México, Migrant Clinicians Network, Secretaría de Salud del Estado de Guanajuato, Pennsylvania Department of Health, Centers for Disease Control and Prevention, Office of Minority Health, National Institutes of Health, and Muhlenberg College. Their collective efforts are evidenced in the relationship that has been forged between Guanajuato and Pennsylvania over the last 2 years. More important, they have implemented a direct method by which Guanajuatan and Pennsylvanian providers can share demographic and clinical data on mutual clients. This demonstration system of data transfer is commonly referred to as the GUAPA (incorporating the first three letters of Guanajuato and the state abbreviation for Pennsylvania) Project. "Guapa" means handsome woman in Spanish and has made for a memorable project name. The background, design, impact, challenges, and vision of this pilot project are described in the following pages.

Background and Rationale for GUAPA

Over the last five centuries, two major global changes have occurred: the transition from isolation to communication and, subsequently, from communication to interdependence of countries. The joining of several countries into the European Community and the signing of the North

American Free Trade Agreement (NAFTA) are the latest evidences of globalization.

The expanded economic integration of Mexico and the United States will boost the already intensive exchange of travelers, workers, and goods. This exchange, in turn, will augment the import-export of infectious diseases; health risks will increase, creating the need for increased binational coordination of health services. Thus, health information exchange and joint database development between Mexico and the United States are strategic necessities of the post-NAFTA reality. Communication and coordination are vital steps toward health risk assessment, epidemiologic surveillance, and health care quality assurance for mobile populations.

Recent estimates have placed the special U.S. population of temporary agricultural residents at approximately 4.5 million persons per year (Oliveira & Cox, 1988). The geographic patterns of migration (commonly called "streams") have become well understood over the last 10 years by public health officials on both sides of the border. Moreover, it is known that the majority of these migrant workers do not participate in any established health care plan, either while in the United States or in Mexico (Knochenhaur, 1991). Perhaps more important, the health care problems faced by the population of largely male Mexican migrant workers in the United States reflect directly on the quality of life of their families who remain in Mexico. For example, migrating workers that acquire infectious diseases in the United States have a substantial likelihood of transmitting these diseases to their families upon their return to Mexico.

The migrant worker's health status, and thus, endurance of physical labor, has a profound socioeconomic impact on family members. It is estimated that approximately five individuals in Mexico are dependent on the resources sent by each Mexican farmworker in the United States (Velasco Mondragón, 1993). In the most extreme example, those workers who bring their families with them also expose their youngsters to the problems associated with the migratory lifestyle. For children, these include suboptimal vaccination, reduced monitoring of developmental milestones, increased injuries, and decreased access to care (Dever, 1991).

To date we have no uniform methodology for sharing information on a specific patient who migrates between states. There is a very real concern that, in the absence of a single-payer national health care plan, these "information islands" may actually worsen. The importance of and urgency for a coordinated system is underscored by considering some of the ramifications of inadequate and inaccessible health care: development of multidrug-resistant strains of Mycobacterium tuberculosis and the documented spread of tropical diseases such as malaria in both California and New Jersey (Brook, Genese, Bloland, Zucker, & Spitalny, 1994). Thus,

health data transfer that is accurate and "real time" (available immediately for patient treatment) is no longer just a technological nicety but rather a medical necessity in the health care management of the U.S. migrant farmworker population. A twenty-first century version of today's GUAPA project has the potential to facilitate comprehensive health care for migrant workers and their children on both sides of the U.S.-Mexico border.

In the planning phase of GUAPA, all reviewers of the proposal universally endorsed the need for exchanging "real time" health data. U.S. health professionals expressed a desire to receive from their Mexican counterparts a "sentinel warning" or notice prior to the arrival of individuals who could be expected in specific migrant worker locations. Additionally, U.S. health providers need an effective way of knowing which pre-existing health problems and disease entities Mexican farmworkers bring with them. The client's verbal report is often not adequate, and many do not bring medical documentation with them. Nonetheless, an accurate medical history is critical in the care of individuals who have chronic diseases, such as the ubiquitous diabetes or hypertension. Equally important from a public health perspective are the detailed medication histories of those with contagious diseases, such as tuberculosis. If a drug regimen is begun in one country, it often must be maintained in the other country in order to achieve a cure.

Similarly, from a Mexican health professional's perspective, it would be very cost effective to receive early warning of those infectious diseases diagnosed in Mexican workers while they are in the United States. In this way, exposure of family members could be determined, and appropriate therapy could be offered immediately. For those family members not yet exposed to the infected worker, such information would be extremely valuable to prevent familial transmission upon the person's return to Mexico.

For example, Guanajuato's health care providers estimate that up to 8 percent (128) of leprosy cases already under treatment are lost to the U.S. migrant streams (Yañez Velasco, 1995). A higher percentage of uncontrolled leprotic individuals might travel undetected to the United States. Also, AIDS fatalities may be occurring at higher rates among migrant farmworkers and their families than among their nonmigrating counterparts, according to the latest findings from a migrant census underway in Moroleón and Yuriría (Peréz-Cabrera, 1994). To address these complex issues, two key ingredients are indispensable: (1) binational collaboration between governmental, management, and clinical counterparts; and (2) binational, bilingual, bicultural systems of communication and epidemiologic surveillance. In developing and implementing the data transfer system, task force members are striving to put these ideals into practice.

Feasibility and Planning of GUAPA

Unfortunately, the Mexican migrant community working within and between the United States and Mexico presents numerous challenges to data sharing, surveillance of infectious diseases, and, often, to quality health care itself. The extreme mobility of migrant workers is both the reason for, and one of the larger barriers to, the binational exchange of health data.

Binational task force members examined current efforts to identify and follow up mobile populations along the Mexico-U.S. border and in other parts of the world, and found that this migrant health information pilot project is the first to test client data transfer and binational epidemiologic surveillance.

Over the course of 12 months, U.S. and Mexican health care providers, health officials, and researchers met on six occasions to discuss the nature of the problem and potential solutions and plans of action. These meetings resulted in the decision to implement this particular project, a demonstration of health data sharing between providers in Guanajuato, Mexico, and Pennsylvania, United States. To maximize outcomes, it was decided that the pilot project would focus on those infectious diseases for which early intervention and treatment are effective and warranted. Four tracer conditions of binational concern were selected: tuberculosis, leprosy, sexually transmitted diseases (STD) (gonorrhea, chlamydia, syphilis, and HIV), and hepatitis.

There are approximately 3,000 Mexican farmworkers who travel annually to southeast Pennsylvania. Use of this limited population will give an initial barometer reading as to the usefulness and feasibility of future expanded endeavors of a similar nature. This step-by-step approach incorporates the fact that successful systems are often, if not always, the result of motivated individuals. Clinical and public health counterparts in Pennsylvania and Guanajuato who care for a mutual population have a built-in incentive to work together. However, a desire on the part of health care providers to work together was not a sufficient condition to guarantee success. The project would be successful only if target population surveys were conducted both in Guanajuato and Pennsylvania. These surveys were intended to determine the level of interest as well as the nature of any concerns expressed by the target population.

The task force analyzed the potential for establishing such an up-to-the-minute health data transfer system. A variety of challenges were identified:

- acceptance of such a system by the migrant workers;
- acceptance by the families of such workers;
- endorsement by both Mexican and U.S. health care professionals who treat these workers;

maintenance of patient confidentiality (including information relating to immigration status);
- ascertainment of optimal technical "hardware and software" systems;
- decisions regarding specific content of health data transmissions;
- establishment of compatible definitions for clinical pictures, diagnoses, treatment protocols, and medicine regimens for the index diseases;
- need for bilingual data transfer;
- establishment of a binationally recognized minimum standard for implementing a culturally competent action plan for a specific patient or family; and
- determination that GUAPA's binational health data transfer objectives are supported by common constitutional principals shared by both the United States and the Republic of Mexico.

Following a series of written exchanges, telephone conference calls, and two face-to-face binational meetings, consensus decisions were reached on each of these topic areas. Many of these concerns are reviewed under the section entitled *Challenges*.

Project evaluation is currently addressing the extent to which each of these challenges was met. Evaluation encompasses the project's technical, financial, legal, political, ethical, cultural, and operational aspects, and will identify areas and methods of improvement. Findings will form the basis of a Binational Migrant Health Information System Protocol. This protocol will facilitate the expansion of the system to other diseases and states, and will establish the preferred design, implementation, monitoring, and evaluation of a Mexico-United States health data transfer system.

GUAPA Project Goals

As with any demonstration project, a primary goal of GUAPA is to test the feasibility of a permanent migrant health information system between Mexico and the United States. The project clearly aims to maintain and expand communications between individuals who would utilize the mistakes and successes of GUAPA in planning additional international health care collaborations.

The more specific goals of the data transfer system are threefold: (1) to provide the kind of exchange of patient information that would allow a health clinic in either Pennsylvania or Guanajuato to monitor the treatment of a particular migrant patient who has been diagnosed with one of the tracer conditions; (2) to contact persons who may have been exposed to one of the tracer conditions; and (3) to provide the opportunity for binational epidemiological surveillance, clinical comparative analysis, and health systems research with regard to the four tracer conditions.

Key supportive actions are needed to reach the above goals. First, all documents concerning the pilot project and all information transferred through the system are in both English and Spanish. Second, the following "call to action" objectives were committed to by both the state of Guanajuato and Pennsylvania: (1) through the personnel exchange and long-term training, health professionals on both sides of the border will endeavor to understand more about their patients' experiences on the other side; (2) both states will endeavor to ensure continuity of appropriate, culturally sensitive, and comprehensive care; and (3) many services are rendered free of charge, and every effort is made to minimize fees for services not covered by mandatory program funds.

The timetable for the GUAPA project is as follows:

- June 1994 through February 1995
  Pilot Phase Implementation
- March 1995 through June 1995
  Analysis and Evaluation of Pilot Phase
- June 1995
  Second Binational Health Data Transfer Conference

GUAPA System Design

The design of the data transfer system is best illustrated by describing the component structures that support it. They are located at the following sites:

- General Hospital, Uriangato, Guanajuato, Mexico
- State Department of Health, Harrisburg, Pennsylvania, USA
- School of Public Health, National Institute of Public Health, Cuernavaca, Morelos, Mexico

The plan focuses on the Mexican migrant sender state of Guanajuato and capitalizes on the decentralization of the Mexican health system that is currently underway.

The General Hospital in Uriangato is strategically placed between the two municipalities (Moroleón and Yuriría) with the highest rates of migration to Pennsylvania. Use of the system and recruitment of new cases is currently being promoted by the Guanajuato Secretary of Health, a task force member. Individuals newly diagnosed with one of the four tracer diseases will follow the usual health care channels within the Guanajuato Health Jurisdiction. However, in addition, that data pertaining to migrants to the United States will now be transmitted to the U.S. GUAPA module.

The U.S. module is located at the Department of Health in Harrisburg, Pennsylvania, which routinely collects all epidemiological data for Pennsylvania. Together with the Migrant Clinicians Network, Pennsylvania Department of Health officials are in charge of promoting the new system. The following networking avenues have been used: the computer communications software "WONDER System" of the Centers for Disease Control (CDC), migrant health bulletins and newsletters, and direct communication with migrant health care providers along the three U.S. migrant streams.

The Pennsylvania Department of Health oversees and facilitates prevention and treatment activities of health care providers (including its own county health departments). The prototype Migrant Health Data Registry was developed by members of the task force. This registry exists in two forms: (1) Migrant Health *Paper* Register, and (2) Migrant Health *Computer* Register. The information that is collected and shared includes discrete demographic data items, ad hoc data files on request, and standard CDC information on notifiable diseases (regarding exposure, diagnosis, treatment, and follow-up). In the clinical setting the health care provider solicits from the patient the necessary background information and adds to that the relevant medical information regarding the clinic visit (diagnosis, treatment, etc.). This information is then transferred from the patient's clinical chart to a paper format developed for the project. This constitutes the Paper Registry. The information is then input into the Computer Registry. Information in the Computer Registry is transferred from the Guanajuato GUAPA Registry to the Pennsylvania GUAPA Registry and vice versa, via the CDC WONDER communications system.

Files in the Migrant Health Computer Registry are kept, updated, and shared, until the outcome of the clinical event is documented. At that time, a final report is generated and shared between the appropriate counterparts. In this way, the two Registries serve as hotlines of information and binational referral for providers of migrant farmworkers. As well, a copy of the completed Migrant Health Paper Register is given to individual clients before they migrate. They are urged to share this copy with subsequent health care providers in either country.

A monitoring module is located at the School of Public Health in Mexico (ESPM), National Institute of Public Health, Cuernavaca, Morelos. This component supports the following activities: (1) linking GUAPA participants in Guanajuato and Pennsylvania for the implementation, development, and evaluation of the project; (2) collecting project results for analysis by the research team; (3) coordinating clinical, epidemiological, and health systems research; and (4) producing the final Binational Health Information System Protocol to be used in expanding the program.

Software

The database computer program being used was specifically designed for this demonstration project. This new software program is called MUST (Mexico United States Transfer) and is written in CLIPPER. MUST is a menu-driven, screen-based data entry program. The MUST program creates a series of files that are then exchanged between Pennsylvania and Guanajuato via the CDC's WONDER program. WONDER is the CDC's electronic communication program that is accessible by modem through an 800 number. It is used to transfer information, including E-mail, and has the ability to search the Public Health Data Base at CDC. Currently WONDER has over 18,000 users and was the logical choice for the GUAPA health information highway. By tapping this resource, the MUST system allows GUAPA participants to enter, exchange, and analyze their data. A compatible Spanish version of MUST has been produced by the Secretaría de Salud de Guanajuato and ESPM.

Data Entry

Data sources for the system are clinical records of migrant subjects with tuberculosis, leprosy, STD, or hepatitis who are seen at any migrant health care facility, private practitioner's office, hospital, state health service, or migrant health clinic in Guanajuato State or the United States.

As written responses from the Paper Registry are entered into MUST, they are automatically subjected to a range and validity check. For example, MUST will not allow the entry of a diagnosis that does not fall within one of the four tracer disease categories. Likewise, MUST checks for valid entries for variables such as gender and marital status. Pull-down menus of valid options are another way in which MUST promotes both ease and accuracy of data entry.

Collected information includes form number, case number, date, file status, name, gender, age (DOB), RFC (Mexican federal taxpayer number), occupation, marital status, number of family members, hometown address in Guanajuato, home base address in United States, relative in United States, relative in Mexico, and states visited in the previous 12 months. Since the clinical picture of the four tracer diseases differ, there are four variations to the health portion of the form. Each includes "routine" data (clinical and laboratory), as well as free text for descriptions and inquiries appropriate for that disease entity.

Data Exchange

MUST's send and receive functions have encryption built into them (via numeric codification of text), thus preserving patient confidentiality. MUST is also designed to return follow-up information to the initiating agency from the investigating agency. Space is provided for reporting what

happened as a result of investigation, test results, diagnosis, treatment provided, or for requesting additional information, if needed. Hard copy reports, as well, are sent to providers.

Due to complicated software difficulties, language translation capabilities have not been built into the MUST system. Translation is often done by the coordinator in each country, but remains a weakness in design.

Since Guanajuatan laborers migrate to states other than Pennsylvania, health care providers anywhere in the United States may participate by sending paper files by mail, facsimile, or modem to the Pennsylvania GUAPA module. There they are manually entered into the computer and then sent to the module at the Ministry of Health, Guanajuato State. Study cases from Guanajuato State are also manually captured and sent to the Pennsylvania module. Pennsylvania distributes the information to the requesting or concerned health care office within a 48-hour period.

Once information is received by the counterpart module, it follows the usual flow of information throughout the health delivery system, including epidemiology departments. Guanajuato cases are reported to Dirección General de Epidemiología, social work offices, laboratories, hospitals, and community centers. Front-line health care users of information are asked to acknowledge and return information on outcomes through the documented resolution of the case.

Data Analysis

For project analysis and evaluation, MUST allows built-in summarizing of reports and the inclusion of ad hoc reports. The MUST system creates a series of databases in dBase format. Because this is such a widespread and well organized database format, the information from the MUST system can be imported into a wide variety of software programs for further analysis. These include spreadsheet and graphics programs (Lotus 1-2-3, QuattroPro, etc.), statistical analysis programs (SAS, SPSS), and geographic information systems (GIS, GISPlus). Several of these software programs are currently being used by GUAPA participants to analyze pilot project data.

Each GUAPA component is now establishing direct and simultaneous communication with each of the other components. All information transfer is acknowledged and registered by sender and receiver modules, thus keeping a logbook of uploading and downloading operations. Databases are updated and purged every quarter by the administrator of each module. The research team is currently developing a directory of system users, listing them in chronological order as they have used the GUAPA system. Additionally, every two quarters the research team determines and disseminates to participants any needed changes in system policies, technology, and practices.

Confidentiality

Patient confidentiality and the ethics of professional-patient interactions are well established traditions in Mexico and the United States. As such, these standards of practice have become firmly entrenched in medical and legal guidelines for implementing new systems of care. The task force reached consensus that medical ethics standards and patient confidentiality would not be compromised by the establishment of a new binational health data transfer system. However, assuring patient confidentiality in the immediate patient population under study (Mexican migrant farmworkers) does pose some special challenges.

Protection of all information pertinent to the immigration status of the client is central in gaining his or her confidence in the new system. This goal is being accomplished by rigorous assurance that immigration questions are not asked of any individuals participating in the system. Additionally, legal measures were taken to assure that all records pertaining to migrant worker clients are not subject to outside scrutiny.

Whenever data are shared with those who are neither treating project clients nor managing the project, data are stripped of all identifiers. Patients are informed that all identifiable data, shared by the design and purpose of the system, are released only after obtaining their written, informed consent. The consent form indicates that (1) no immigration information will be sought by this system, nor will any information about participating clients be shared with non-health-care professionals participating in the system; (2) all mechanisms possible will be utilized to ensure the security and confidentiality of information transmitted across the border; and (3) only those farmworkers and their families who have jointly signed an informed consent document (indicating that they both wish free exchange of health data information between the migratory worker and family) will be entered into the system.

Patients have the authority to withdraw their permission to disclose their records, without explanation and at any time during the project. Once information is released to health care providers in either country, it is subject to the respective laws, regulations, and procedures regarding confidentiality. Only qualified health care providers or offices, who are subject by law to ensure confidentiality of clinical information, will be eligible to share and use the system's data. These assurances of confidentiality are the responsibility of the Pennsylvania and Guanajuato health authorities. Any confidentiality gaps or threats (none to date) would be registered and reviewed by both the research team and the binational task force.

Data Security

The security of data is assured through a number of strategies. On-line access to files is granted only after verification of user's identity, by using

the CDC's WONDER system password. After use of the system, access is recorded. In the event of nonauthorized access, a record would also be made and the respective authority would be notified.

Updated records are labeled with the date and the label "updated." No alteration of registers is permitted. If modifications are needed, the original record is kept and the modified record is labeled "amended." The transmission of information is limited to the three modules described, and to the clients' health care providers.

Files are encrypted for transmittal with the client's RFC (Mexico's federal taxpayer number), known only by the database administrator of the module. After completion (resolution) of the event that prompted the record transmittal, that file is locked out of the database and will be used only for future consultation or evaluation purposes. That is, it is not possible to consult completed cases on-line routinely.

Activities to Date/Preliminary Evaluation

On July 27, 1994, the first successful exchange of sentinel disease information took place between Pennsylvania and Guanajuato. This transfer of information enabled the Guanajuato Department of Health to locate and bring to medical care the sexual contact of a migrant diagnosed and treated for syphilis in Pennsylvania. This information sharing represents the first successful electronic interface of public health systems in different countries for the purpose of intervening in the spread of a communicable disease by way of contact tracing.

Other first-year GUAPA activities centered on fulfilling the task force's objective of increasing the capacity for cross-cultural health outreach and education. The stated goal is to increase prevention and early case detection of the four tracer infections. To this end, the Pennsylvania Department of Health, in cooperation with Muhlenberg College, the Chester County Department of Health, and Comunidad Hispana, began an outreach education and screening program for Mexican migrant workers in southeastern Pennsylvania. To facilitate this effort, the Guanajuato Secretary of Health assigned a physician, Jose Ramírez Valenzuela, to work in Pennsylvania. Furthermore, the State of Guanajuato developed, and made available, relevant and culturally sensitive educational materials published for patient education in Mexico.

Dr. Ramírez Valenzuela conducted educational programs for over 800 farmworkers during the course of his 4-month stay in Pennsylvania. He facilitated several screening projects, conducted by the Pennsylvania Department of Health, during which over 200 workers were screened for syphilis and HIV. Additionally, he worked with the Chester County Health

Department in their tuberculosis screening of 40 Mexican farmworkers. Those screening efforts, while limited by personnel, time, and funds, identified 2 cases of untreated syphilis, 1 HIV-positive worker, and 11 individuals with positive tuberculin tests. With informed consent, the names and addresses of these individuals' contacts were transmitted to Guanajuato in order to medically examine, educate, and treat them, if needed.

Simultaneously with the Pennsylvania outreach project, the State of Guanajuato initiated a major STD screening project in public family planning clinics in the two cities that are major migrant sender communities, Moroleón and Yuriría. These screenings included testing for syphilis, gonorrhea, and chlamydia, as well as locating individuals with Hansen's disease. The two screening efforts in Guanajuato and Pennsylvania have identified several previously undiagnosed cases of tuberculosis, syphilis, chancroid, chlamydia, and HIV.

Now the basic technological requirements for GUAPA have been accomplished. Technologically speaking, after initial compatibility issues were corrected, the system has worked perfectly. Both the Mexican Instituto Nacional de Salud Pública and the Health Department of Guanajuato have decided to make minor system modifications and include a disease registry. Software for such a registry is currently available from the CDC Division of STD/HIV Control and Prevention.

In the analysis of the feasibility of system implementation, health professionals on both sides of the border discovered a wide range of concerns ranging from very technical issues (such as standard identifiers and hardware/software choices) to very serious infrastructure problems (such as the lack of information on migrant demographic, socioeconomic, and health needs). A major infrastructure weakness is the present inability of both countries to rapidly share information among their own states. This lack of internal communication severely limits binational collaborations in exchanging data and resources.

A detailed cost effectiveness analysis relating to the implementation of a more geographically comprehensive binational health data transfer system is beyond the scope and capabilities of the task force. Perhaps a formal governmental entity, such as the Agency for Health Care Policy and Research (AHCPR) of the U.S. Public Health Service or El Instituto Nacional de Salud Pública of Mexico, might find such a topic suitable for in-depth research. However, it would seem that the implementation of a fully binational system would not require significantly more people in either country. Given the virtual explosion in new technologies of the "information superhighways," the actual cost for pertinent hardware and software and the operations of this equipment appear minimal, especially

when considering the public health savings of early intervention and prevention of disease.

What would be needed, however, is the education of providers about cross-cultural skills and different types of care effective with various mobile populations. An educational process on both sides of the border is needed to enhance bilingual skills, bicultural sensitivity, and understanding of the clients' lifestyles.

GUAPA Challenges

The principal barriers to utilization of the data transfer system appear to be financial and political. Other major barriers include a lack of culturally sensitive health care in Pennsylvania, use of different drugs and differing standards of diagnosis and care between Guanajuato and Pennsylvania, a lack of participation by U.S. receiver states other than Pennsylvania, and ambiguities regarding provider responsibility upon receipt of shared data.

Accessibility to health care for migrant farmworkers must be considered a major difficulty and barrier to communicable disease intervention and prevention. For example, testing for tuberculosis is often severely limited by both provider and patient financial constraints. Moreover, U.S. providers appear to have many misconceptions regarding the availability and quality of health care in Mexico and have expressed reluctance to gather and send information to Mexico for purposes of contact tracing. Mexican providers, on the other hand, have expressed reluctance to share locating information on individuals working in the United States with questionable legal status.

Outreach to the migrant community is frequently conducted by persons unfamiliar with both the process of disease intervention and the cultural milieu of the migrant farmworker. This results in an inability to adequately disseminate and gather the information necessary to engage the provider in disease intervention and prevention offered by the GUAPA Project. Binational and bicultural dialogue would allow a more comprehensive approach to the health needs of migrant populations. Perhaps one of the most sobering aspects of the development of a binational health data transfer system was discovering the significant divergence in medical standards of prevention, diagnosis, treatment, and follow-up for infectious clients. Not only do the United States and Mexico have significant differences in these areas, but the various states within the two countries also vary greatly from each other. For example, certain U.S. clinics require laboratory confirmation of a chlamydia infection in order to secure diagnosis and institute therapy, whereas others do not. Many clinical operations in Mexico do not utilize this laboratory technology as yet. Similarly, the specific steps required to pronounce a patient "cured" of an infectious illness (such as

syphilis) vary substantially not only between the United States and Mexico, but also among the different states within each country.

No easy solution to this apparent medical "Tower of Babel" is apparent. The problems inherent in the adoption of standardized definitions of diagnosis and outcomes do not appear to be rooted in differences of scientific theory or opinion. Moreover, the difficulties in such basic transfer of health data information do not appear to be related to any provincial desire to withhold information from one region (or country) to the other. Instead, wide differences of opinion exist with regard to the convenience of utilizing specific laboratory diagnostics in confirming clinical impressions. There certainly exist significant differences with regard to the resources available for use of technologies in the different regions on both sides of the border.

It is likely that in time, a "lowest common denominator" standard for diagnosing and treating outcomes will be adopted by the World Health Organization (WHO). In the meantime, there is a clear benefit to the immediate implementation of a binational system that would at least allow counterpart health professionals to be aware of each other's diagnostic and treatment criteria.

The system for drug approval and drug regulation in Mexico differs significantly from the system that has been adopted in the United States. Thus, it is likely that a patient who is diagnosed with tuberculosis in the United States may start the first 3 months of therapy with a specific drug regimen and 3 months later (upon return to Mexico) be unable to secure those drugs. Moreover, it is possible that health professionals on either side of the border may be unable to dispense drugs obtained in the other country, even if an appropriate amount of drug to complete therapy is provided to the patient. Similarly, the current treatment protocols for handling toxicity of treatment and other complications may also differ between the two countries. An immediate task at hand for the task force is to identify those drugs on both sides of the border that have sufficient compatibility to be utilized interchangeably.

Yet another realization of GUAPA regards the need for increased consortia building among migrant receiver states in the United States. Data entry into the pilot project has not been forthcoming from areas other than southeastern Pennsylvania. It may be that a lack of understanding of the health care delivery system in Mexico and a concern for the preservation of patient confidentiality are barriers to participation. To address these concerns, the Pennsylvania and Guanajuato Departments of Health have prepared an educational video describing the structure of the health care delivery system in Mexico, services provided, and policies and procedures regarding the preservation of patient confidentiality.

A specific medical, social dilemma, with distinct ethical ramifications, emerged even in the planning phase and continues to limit the success of the

project. Specifically, what are the ethical and legal obligations of health professionals on either end of the data transfer system to respond to the health information that they receive? To add to this concern, the United States suffers from a severe lack of bilingually and biculturally sensitive health care professionals.

In lieu of systemic infrastructure changes, realistic and cost-effective solutions have been improvised for the above concerns in order to support GUAPA activities. Moreover, the participants have reached consensus on far greater and overriding issues: the implementation of such a system is the expressed desire of potential system clientele and will be cost effective.

It is clear that the implementation of a binational system of health data exchange is critical to any major economic integration between the two countries. Yet, there is a long history of political distrust and cultural misunderstanding between the United States and Mexico. With this project, we have before us an expression of intent to overcome these historical barriers to communication for the purpose of improving health care on both sides of the border.

Not surprisingly, the National Institute of Health of Mexico reports that other states in Mexico are lining up to participate in a broader binational exchange. In fact, Illinois and Morelos are beginning collaborative conversations with each other and with GUAPA designers in hopes of replicating the pilot project.

GUAPA demonstrates that the exchange of information is technologically possible with relative ease and minor expense. The bigger challenge is now clear—to surmount the political, cultural, and economic barriers that impede the provision of health care on both sides of the border.

In the context of NAFTA, a spotlight has been directed on the provision of health care in both countries. A minimum standard of health care for migrant farmworkers is an essential component of any binational collaboration on disease control. The GUAPA project certainly promotes the reality of a minimum and quality standard of care.

The development of a master plan for further binational collaboration on data transfer should consider the perspectives of the task force and system users. The specific steps for incrementally augmenting the amount of health data exchanged between the United States and Mexico, and the timetables for doing so, will necessarily require more feasibility information. This process will include the analysis of the GUAPA demonstration.

Task force members agree that the formal adoption of a true binational agreement must await the clearance of the respective state departments. Official, high level endorsement will ensure that such an agreement is rooted in mutual and constitutional legality, the authorization of which is beyond the scope and abilities of the task force members.

Task force deliberations began before the approval of the North American Free Trade Agreement. The obvious need for this supportive medical infrastructure has only increased following NAFTA's ratification. One must remember that as we enter the twenty-first century, a possibility for increased migration between our two countries (not only from Mexico to the United States, but also vice versa) should be anticipated. The capacity to increase the level of binational economic interchange will depend on the ability of a wide range of professionals on both sides of the border to implement appropriate sociological infrastructures, including health data transfer.

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